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# TM 10-8340-219-14

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT
AND GENERAL SUPPORT MAINTENANCE MANUAL

## TENT, FRAME TYPE, UNIVERSAL FIELD MAINTENANCE, EXPANDABLE, COTTON DUCK, FIRE, MILDREW, WATER AND WEATHER RESISTANT, W/O FLOOR, FLOOR AREA 27 FT W, 22 FT H, 64 FT LG, LENGTH EXPANDABLE IN 8-FOOT INCREMENTS, W/COVERS, FRAMES, GROUND ANCHOR KIT, LINERS, FSN 8340-935-6372

This reprint includes all changes in effect at the time of publication - Change 1.
See inside front cover for details.

HEADQUARTERS, DEPARTMENT OF THE ARMY
JANUARY 1970

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In this edition of TM 10-8340-219-14, all material from change 1 has been incorporated into the text of the publication. The next change to this publication will be Change 2 and will print as "remove-and-insert" looseleaf pages. At that time, changed material will be indicated by a vertical bar in the margin.

JUNE 1985

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
*General, United States Army*
*Chief of Staff*

Official:

DONALD J. DELANDRO
*Brigadier General, United States Army*
*The Adjutant General*

## SAFETY PRECAUTIONS
## WARNING
## HIGH VOLTAGE

Disconnect main power source before servicing, repairing, or replacing the electrical equipment.

TECHNICAL MANUAL
No. 10-8340-219-14

HEADQUARTERS
DEPARTMENTS OF THE ARMY
WASHINGTON, D. C., *30 January 1970*

**OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL**

# TENT, FRAME TYPE, UNIVERSAL FIELD MAINTENANCE, EXPANDABLE, COTTON DUCK, FIRE, MILDEW, WATER AND WEATHER RESISTANT, W/O FLOOR, FLOOR AREA 27 FT W, 22 FT H, 64 FT LG, LENGTH EXPANDABLE IN 8-FOOT INCREMENTS, W/COVERS, FRAMES, GROUND ANCHOR KIT, LINERS, FSN 8340-935-6372

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# CHAPTER 1
# INTRODUCTION

## Section I. GENERAL

### 1-1. Scope

These instructions are published for the use of the personnel and organizations to whom the expandable, universal field maintenance, frame-type tent is issued. Chapters 1 through 4 provide information on erecting and striking the tent, and on the operation, daily preventive maintenance services, and organizational maintenance of the equipment, accessories, components, and attachments. Chapters 5, 6, and 7 provide information for direct support and general support maintenance. Chapter 8 provides information on administrative storage of equipment and on demolition of materiel to prevent enemy use.

### 1-2. Forms and Records

Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

### 1-3. Equipment Serviceability Criteria (ESC)

There are no ESC's applicable to the expandable, frame-type tent.

### 1-4. Reporting of Errors

Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to the Commanding General, U.S. Army Mobility Equipment Command, ATTN: AMSME-MPP, 4300 Goodfellow Boulevard, St. Louis, Mo. 63120.

## Section II. DESCRIPTION AND DATA

### 1-5. Description

The expandable, universal field maintenance, frame-type tent (figs. 1-1 and 1-2) consists of a metal frame, a tent body or outer fabric, and a tent liner with screen. The tent dimensions are 27 feet wide by 22 feet high by 64 feet long when completely expanded. The tent is divided into end and intermediate sections. Each of the end sections consists of an end arch assembly and a door assembly. An intermediate section consists of an intermediate arch assembly and nineteen 8-foot purlins. The intermediate sections permit expansion of the tent in 8-foot lengths. Seven intermediate sections and an end section are required to expand the tent to its 64-foot length. The tent includes an interior lighting and electrical outlet assembly which is connected to an appropriate power source. Heat is provided through ducts in the outer skin when an approved heating device is available.

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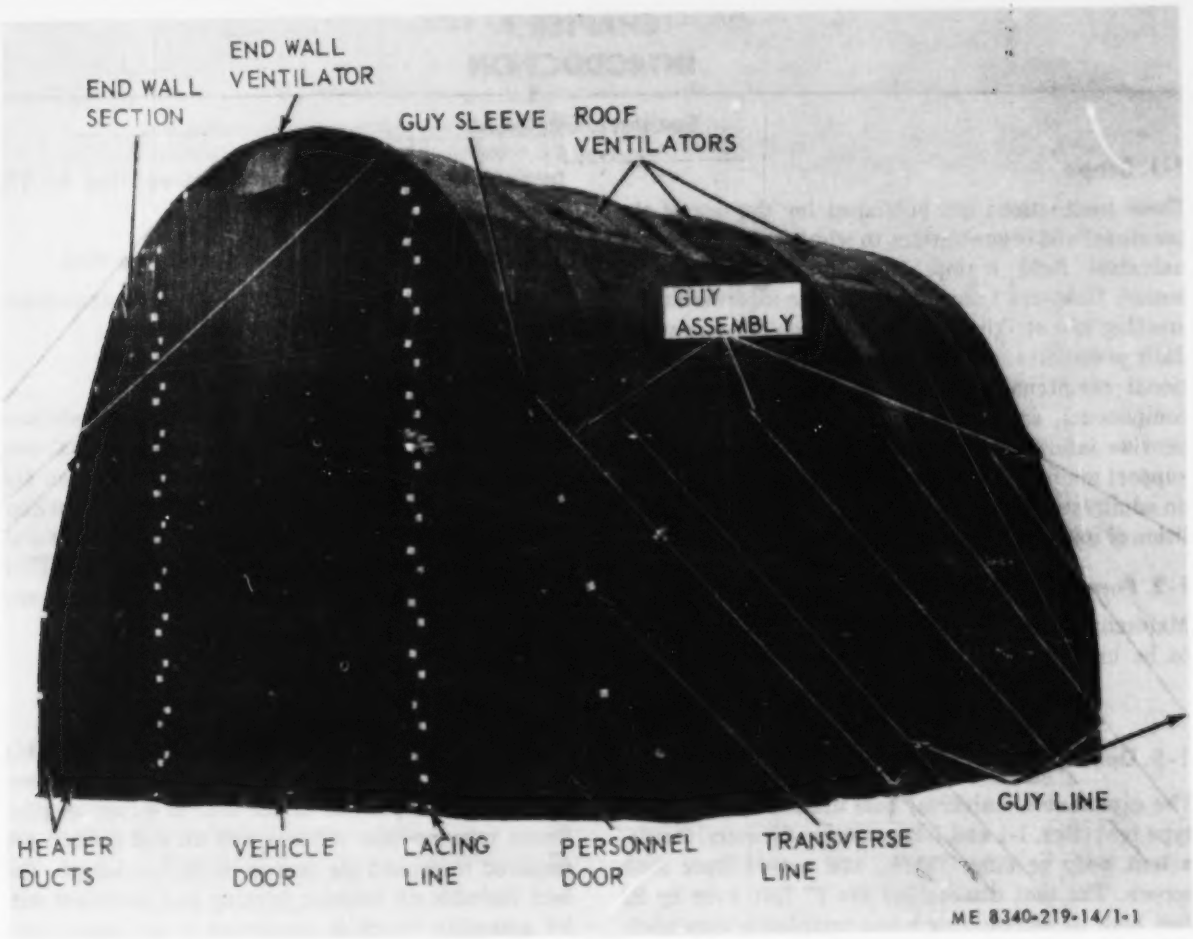



*Figure 1-1. Tent, frame-type, universal field maintenance, right three-quarter view.*

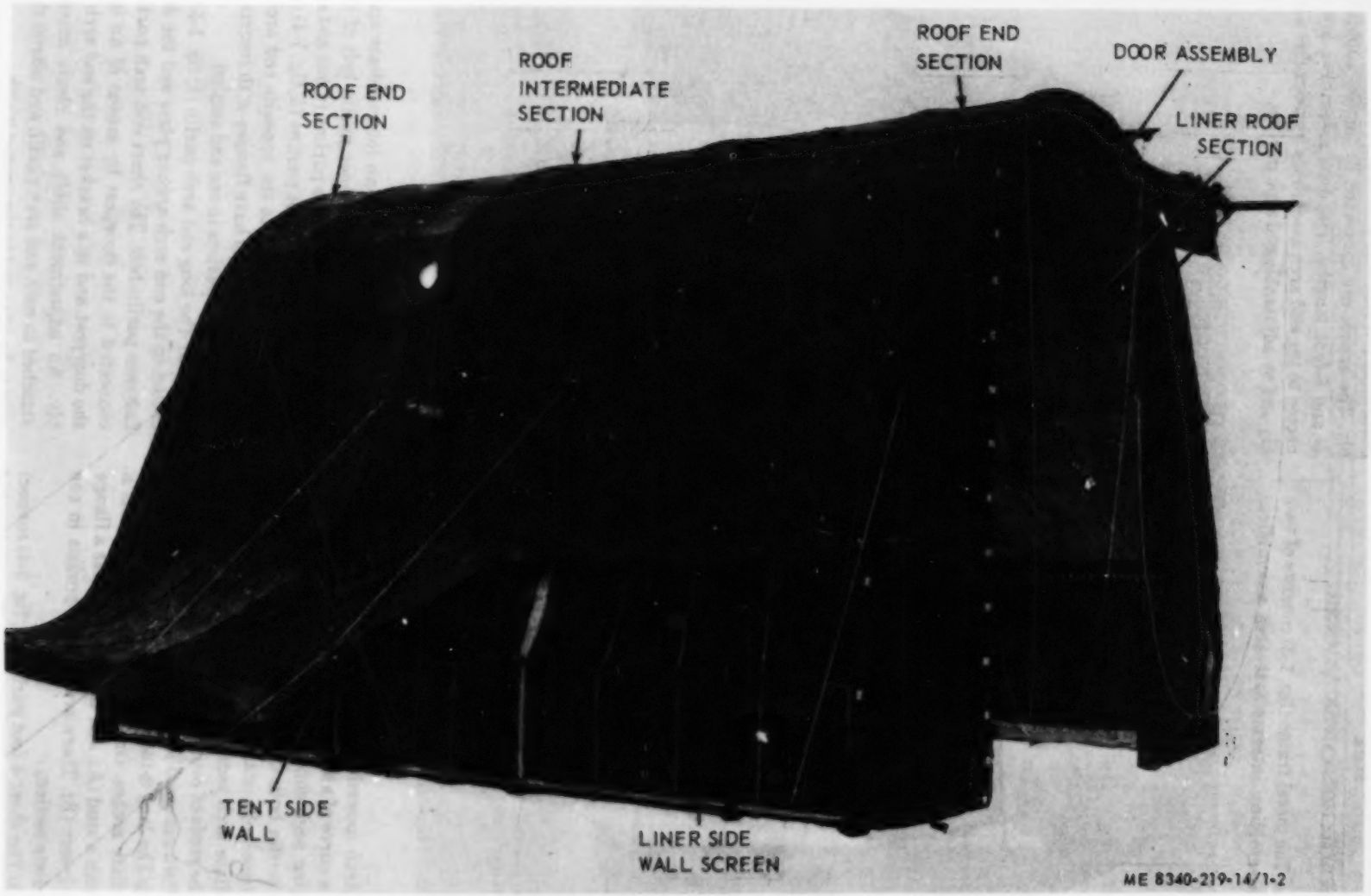



*Figure 1-2. Tent, frame-type, universal field maintenance, left three-quarter view.*

NOTE

Figures 1-1 and 1-2 show a tent 32 feet in length.

*a. Frame.* The metal frame (fig. 1-3) consists of two end arch assemblies, intermediate arch assemblies, connecting purlins, and a cantilever-type door assembly. The arches are connected by purlins supplied in 4- and 8-foot lengths. The door assemblies are connected to the end arch assemblies by a bracket assembly and by adjustable end arch purlins.

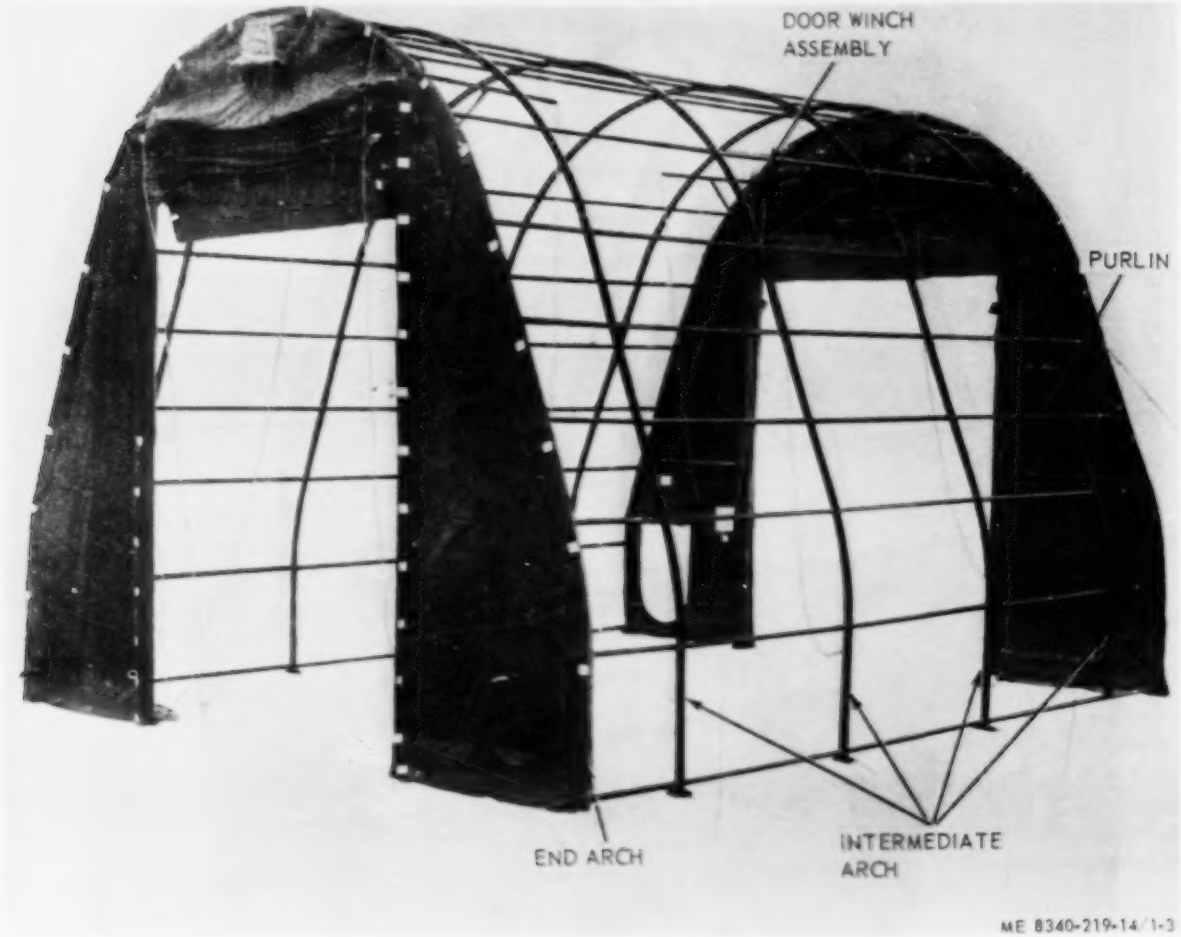



*Figure 1-3. Tent frame.*

(1) *Arch assemblies.* Each arch assembly (fig. 1-3) has a curve of about 57 feet and consists of seven interlocking segments. Each end arch segment has fastener purlin bolts that protrude through the segment. These bolts attach purlins to the arch. Each intermediate arch segment has purlin stud holes to receive the studs of connecting purlins.

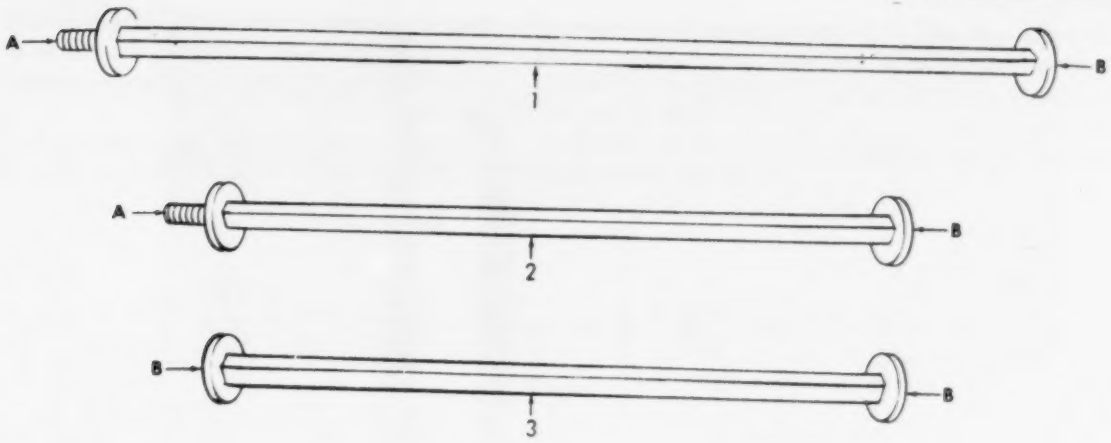
(2) *Purlin assemblies.*

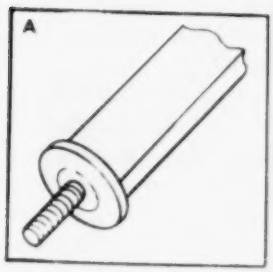
*(a)* The long 8-foot purlins (1, fig. 1-4) connect intermediate arches. One end of these purlins has a flange with a stud (A), and the other end has a flange with an insert (B). There are 19 long purlins in one intermediate section.

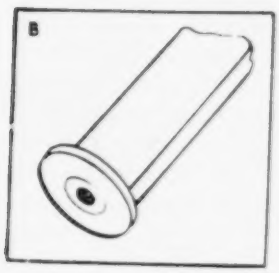
*(b)* The short 4-foot purlins (2, fig. 1-4) connect an intermediate arch to an end arch. The stud end of the purlin is connected to an intermediate arch, and the insert end to the fastener purlin bolt of the end arch. There are 19 of these purlins in one end section.

*(c)* The short 4-foot purlins (3, fig. 1-4) connect an intermediate arch to the opposite end arch. Both ends of these purlins have flanges with inserts. There are 19 of these purlins in one end section.

*(d)* The long end arch purlin (2, fig. 1-5) is connected to the end arch anchor plate and the doorpost fastener purlin bolt. The short end arch purlin (1) is connected to the doorpost by means of an insert in the doorpost and to a bracket on the end arch assembly. An adjustment shaft and clevis assembly is attached to each end arch purlin and allows the doorpost to be adjusted to the proper width.

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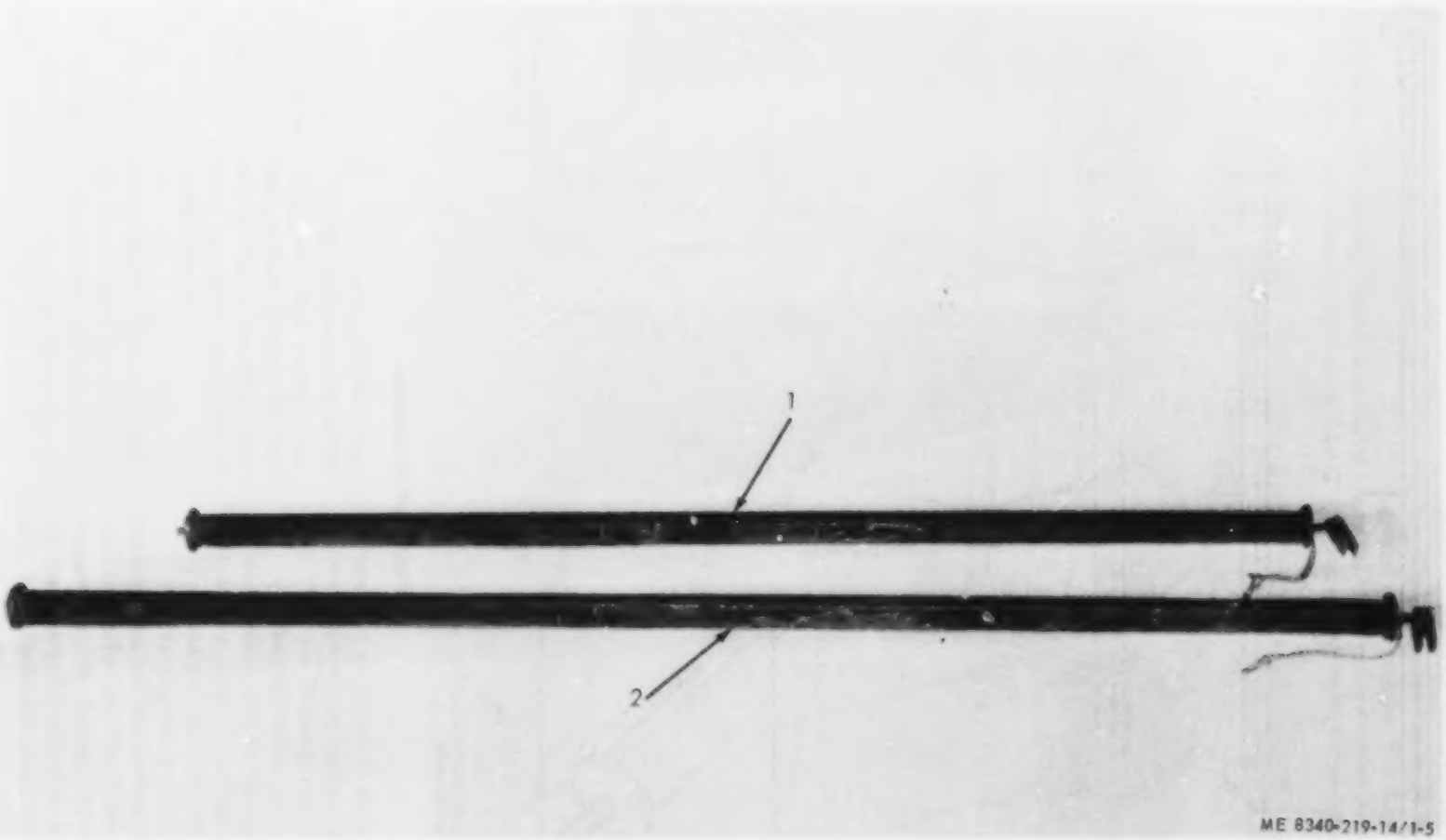
1 Long purlin assembly
2 Short purlin assembly (male and female ends)
3 Short purlin assembly (female ends)

*Figure 1-4. Purlin assemblies.*

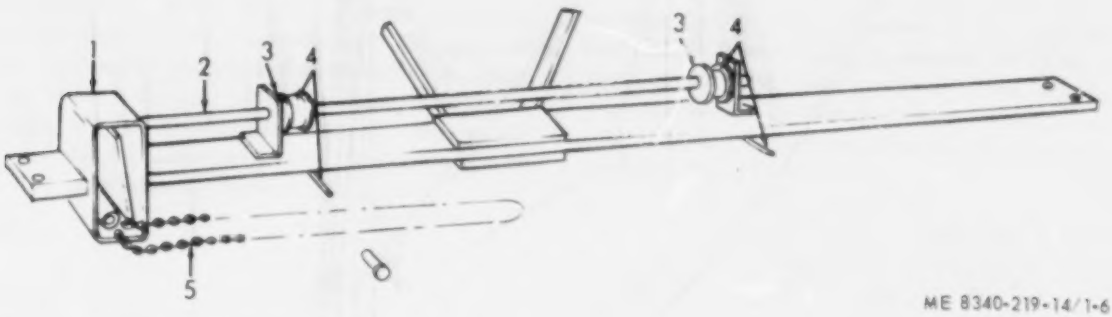



1 End arch purlin (upper)
2 End arch purlin (lower)

*Figure 1-5. End arch purlins.*

(3) *Door assembly.* A door assembly consists of a door winch and transom chord assembly, a left and a right doorpost assembly and seven door spar assemblies.

*(a) Door winch and transom chord assembly.* Each end arch is equipped with a door winch and transom chord assembly (fig. 1-6). The door winch is operated by a hoist chain (5) to raise and lower a vehicle door. The chain is attached to the winch (1) by a roller chain and drive socket. It rotates the hoist shaft (2) and drums (3) to which hoists cable assemblies (4) are attached.

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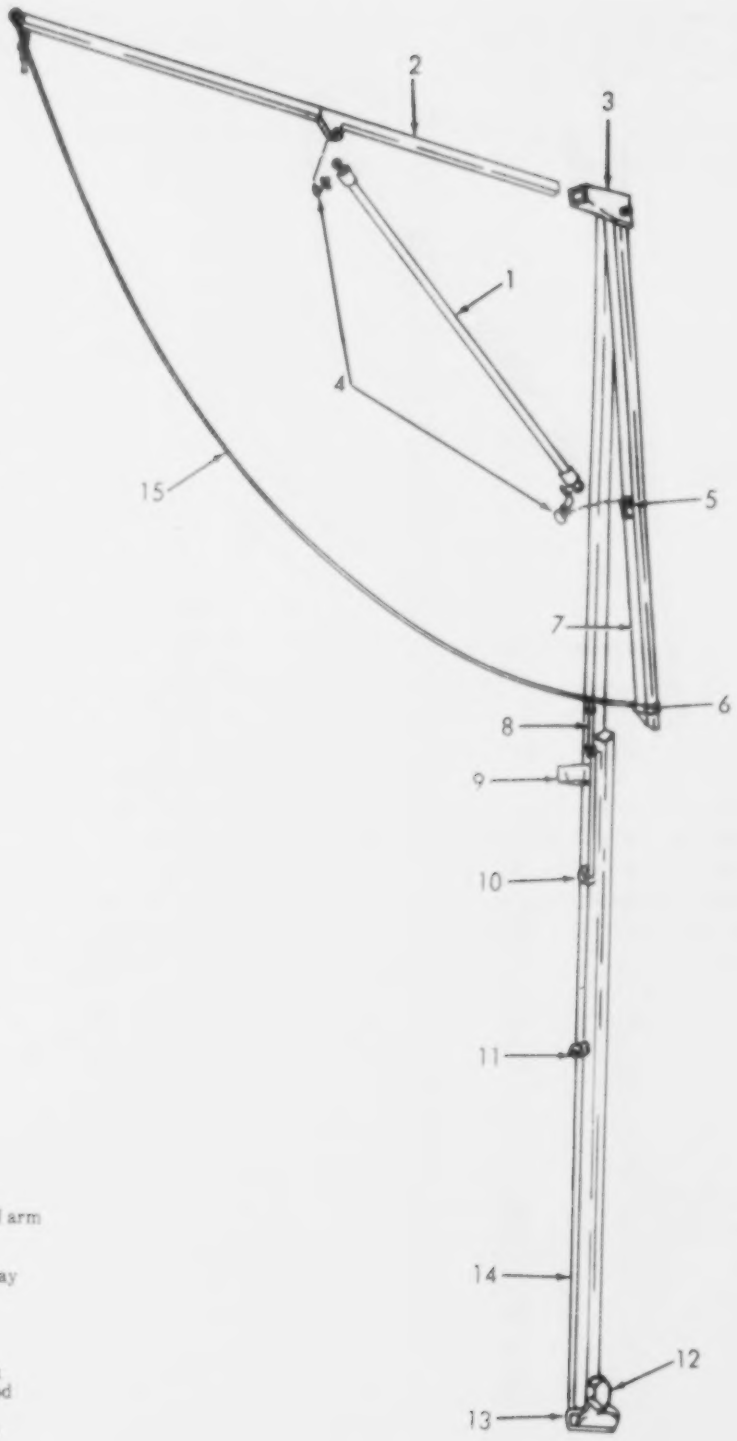
1 Winch
2 Hoist shaft
3 Drums
4 Hoist cable and toggle assembly
5 Chain

*Figure 1-6. Door winch and transom chord assembly.*

*(b) Doorpost assembly.* A right and a left-hand doorpost assembly (fig. 1-7) form the frame for the vehicle doors and are used in opening and closing them.

*1.* The top of each doorpost assembly is connected to a movable socket on the end arch by an eyebolt and an eye pin and chain assembly. The bottom and side of each doorpost assembly is connected to the end arch by an end arch purlin and an adjustable shaft and clevis assembly.

*2.* The doorpost top assembly (7, fig. 1-7), when closed, is locked to the doorpost assembly (14) by a chain bolt (8) and strike plate (6). When opened, it pivots upward and outward with the raised vehicle door to provide the clearance necessary to bring equipment into the tent. It is opened by releasing the chain bolt control rod (10) that holds the chain bolt to the strike plate, and by pulling the door control arm rope (15) to activate the control arm (2) and the diagonal door control arm (1).




1 Diagonal door control arm
2 Door control arm
3 Doorpost gusset
4 Toggle pin and chain ay
5 Top post bracket
6 Strike plate
7 Doorpost top ay
8 Chain bolt
9 Door control arm lock
10 Chain bolt control rod
11 Chain retainer
12 Fastener tent purlin
13 Doorpost anchor
14 Doorpost ay
15 Door control arm rope

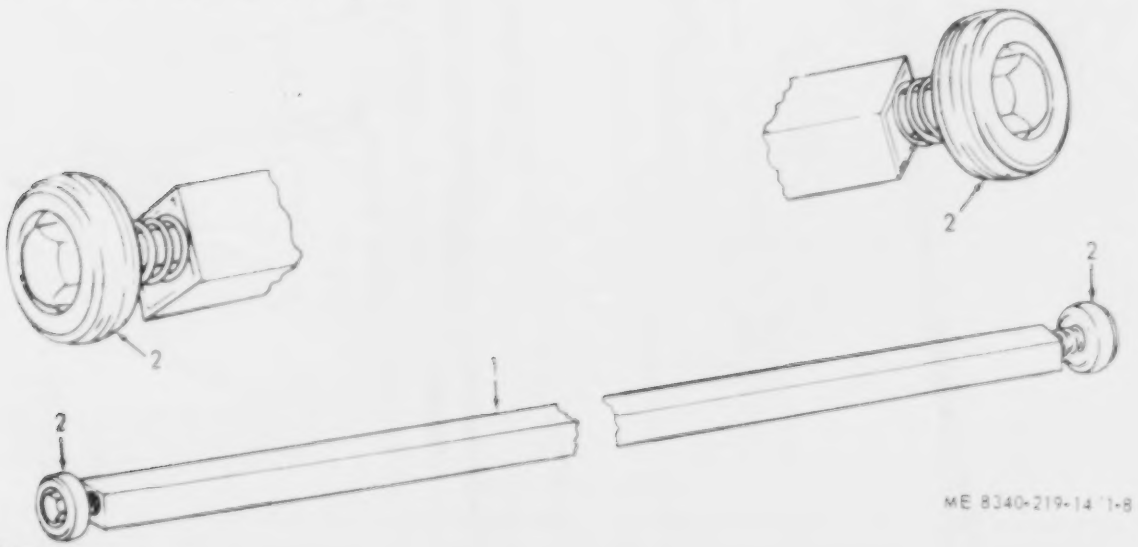
*Figure 1-7. Doorpost assembly.*

*(c) Door spar assembly.* Refer to paragraph *b*(1) *(a)*, below, for a description of the door spar assemblies.

*b. Tent Body (outer fabric).* The tent body covers the frame assembly and consists of the end wall sections, the end roof section, and the intermediate roof section. It is made of cotton duck cloth.

(1) *End wall section.* Each end wall section (fig. 1-1) contains a vehicle door, ventilator assembly, personnel door, and two heater ducts. The end wall section is attached and secured to the end arch assembly by arch hooks and by purlin flaps. The purlin flaps are secured around the lower end arch purlin by lacing and S-hooks, and around the upper end arch purlin by hook and pile fastener tape.

*(a) Vehicle door.* The vehicle door (fig. 1-1) operates on a venetian blind principle. Seven metal door spar assemblies (fig. 1-8) are inserted in pockets on the inside of the door fabric. Each door spar assembly (1) is equipped with nylon rollers (2) that fit into channels of the doorpost assemblies. Hoist cable assemblies from the door winch assembly pass through holes in the door spar assemblies and through D-ring guides attached to the inside of the door fabric. These cable assemblies, which are activated by the hoist chain connected to the door winch, raise and lower the door spar assemblies and vehicle door fabric. When closed, the door is secured by J-hook and lacing lines




1 Door spar
2 Nylon rollers

*Figure 1-8. Door spar assembly.*

*(b) Ventilator assembly.* The ventilator assembly (fig. 1-1) is located above the vehicle door. It consists of a cloth netting insert screen, a hood with spring assembly and a ventilator flap with tie tapes and D-ring chapes. The ventilator may be opened or closed as required.

*(c) Personnel door.* The personnel door (fig. 1-1) is located to the right of a tent end wall section when viewed from the outside. The door is U-shaped and in closed with a slide fastener. The door flaps are secured with hook and pile fastener tape. The door can be rolled open and secured open with tie tapes.

*(d) Heater ducts.* The heater ducts (fig. 1-1) with tie tapes are located to the left of the end wall section when viewed from the outside.

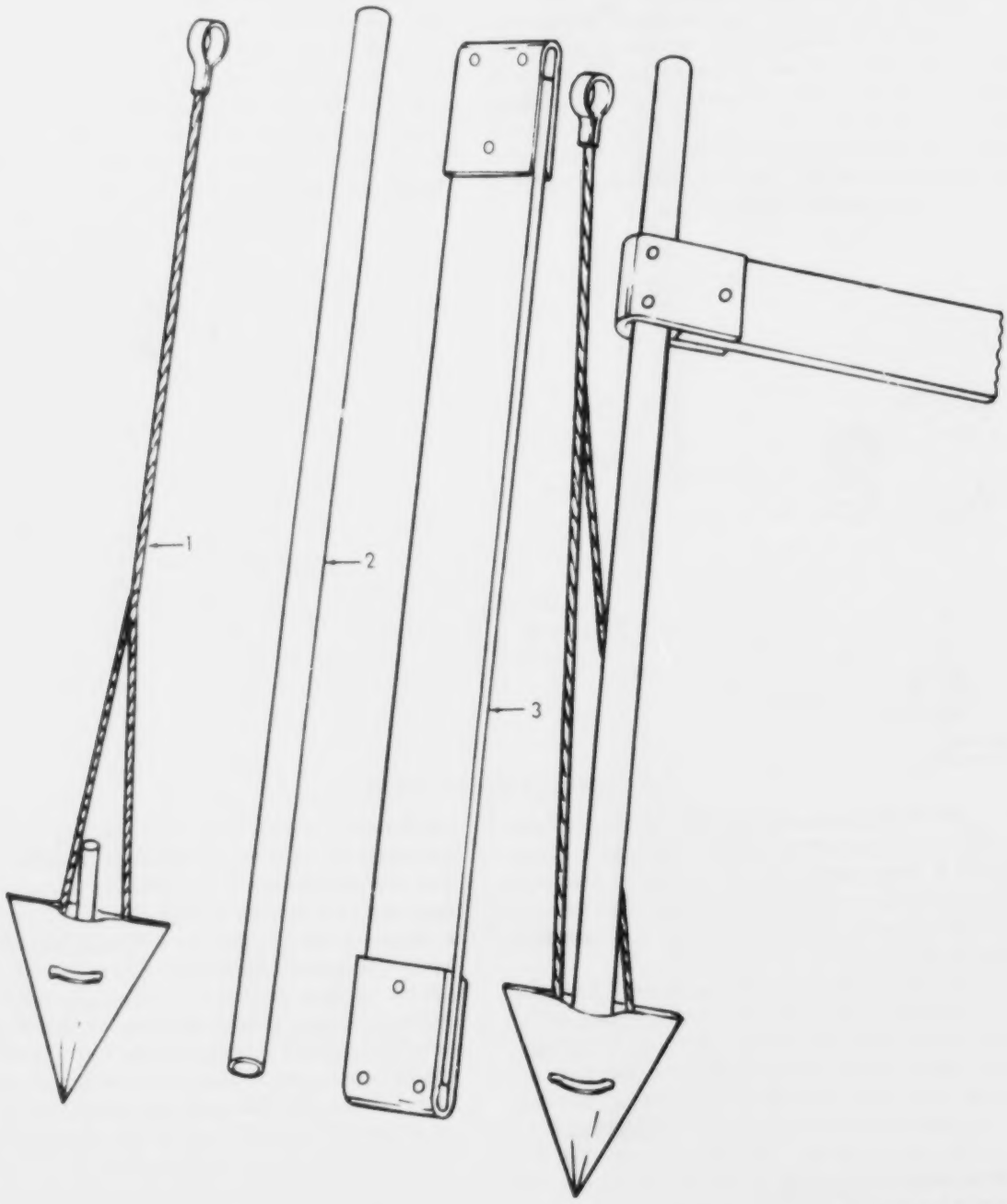
(2) *Roof end and roof intermediate sections.* The roof end section (fig. 1-2) is 12 feet wide and the roof intermediate section (fig. 1-2) is 8 feet wide. Each section contains two roof ventilators (fig. 1-1). The ventilators consists of a cloth netting screen and ventilator flap that can be opened or closed as desired. The roof sections are attached to the frame by purlin flaps that are secured around the ground purlin and a side arch purlin, and are tied with lacing and S-hooks. Transverse lines (fig. 1-1) are passed through sleeves of each section and allow the fabric to be drawn up tightly around the frame. The roof sections form the roof and sidewalls of the tent. The sidewalls are secured together from the side purlin down by becket lacing. The sidewalls are designed to be rolled up or extend outward to form an awning (fig. 1-2) when complete ventilation is desired.

*c. Liner.* The liner and screen consist of two 12-foot wide end sections and 8-foot wide intermediate sections. These sections are basically the same. The liner is fabricated from cotton oxford cloth and a nonmetallic screen. The cloth forms the roof section (fig. 1-2) and the screen forms the side walls (fig. 1-2). The

liner is secured to the frame by tie tapes, securing straps, and hook and pile fastener tape.

*d. Tent Anchoring Components.*

(1) *Ground anchors.* The erected tent is anchored to the ground by steel pins and arrowhead-type ground anchors (1, fig. 1-9). The driving rod (2) and driving rod holders (3) assist in driving the anchors. The erection kit issued with the tent includes 50 anchors and 48 steel pins.

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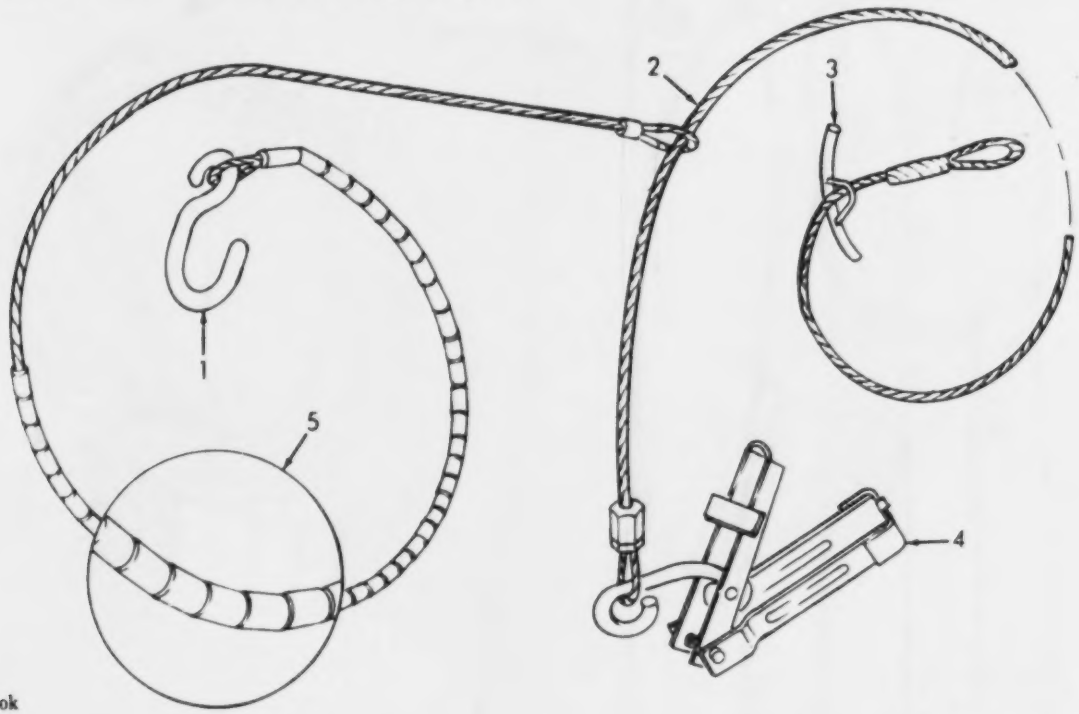
1 Ground anchor
2 Driving rod
3 Driving rod holder

*Figure 1-9. Driving rods and ground anchors.*

(2) *Guy assemblies.* Each guy assembly (fig. 1-10) consists of an S-hook (1), cables (2), toggle bar (3), toggle (4), and adjusting beads (5). These assemblies, about 11 feet long, secure the tent to the ground anchors. Adjustments are made by sliding the adjusting beads through the toggle and locking in position. Three guy assemblies (fig. 1-2) are attached on each side of tent on each end arch, and one each on the center intermediate arch.




1 S-hook
2 Cable
3 Toggle bar
4 Toggle
5 Adjusting beads

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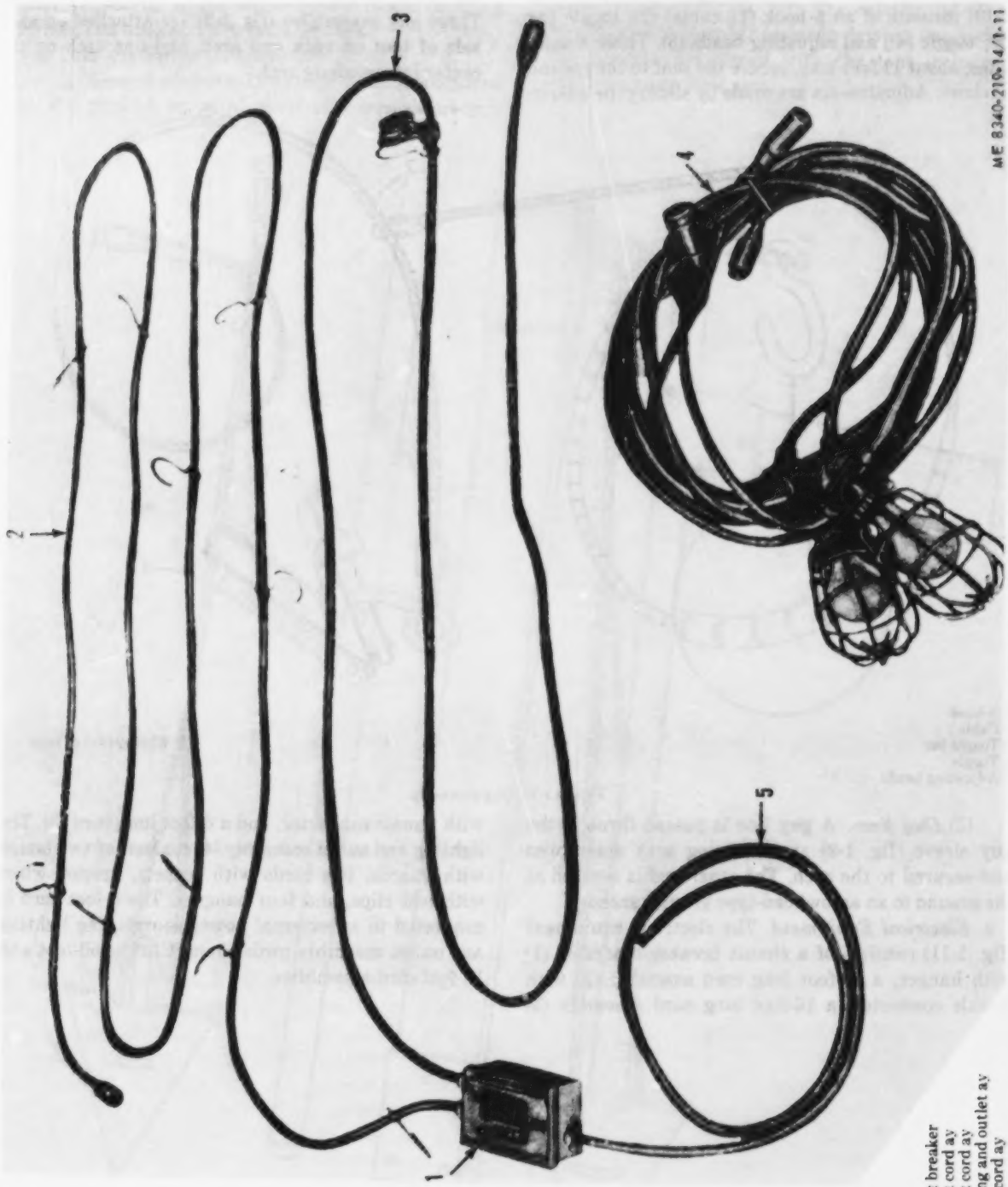
*Figure 1-10. Guy assembly.*

(3) *Guy lines.* A guy line is passed through the guy sleeve (fig. 1-2) at remaining arch assemblies and secured to the arch. The other end is secured at the ground to an arrow head-type ground anchor.

*e. Electrical Equipment.* The electrical equipment (fig. 1-11) consists of a circuit breaker assembly (1) with hanger, a 50-foot long cord assembly (2) with female connector, a 16-foot long cord assembly (3) with female connector, and a 6-foot long cord (5). The lighting and outlet assembly (4) consists of two lamps with guards, two cords with sockets, ground wires with test clips, and four hangers. The 6-foot cord is connected to an external power source. The lighting and outlet assembly cords connect to the 50-foot and 16-foot cord assemblies.




1 Circuit breaker
2 50-foot cord ay
3 16-foot cord ay
4 Lighting and outlet ay
5 6-foot cord ay

*Figure 1-11. Electrical equipment.*

*f. Covers.* Covers (fig. 1-12) are provided to protect the outer skin and liner during transport and while in storage.

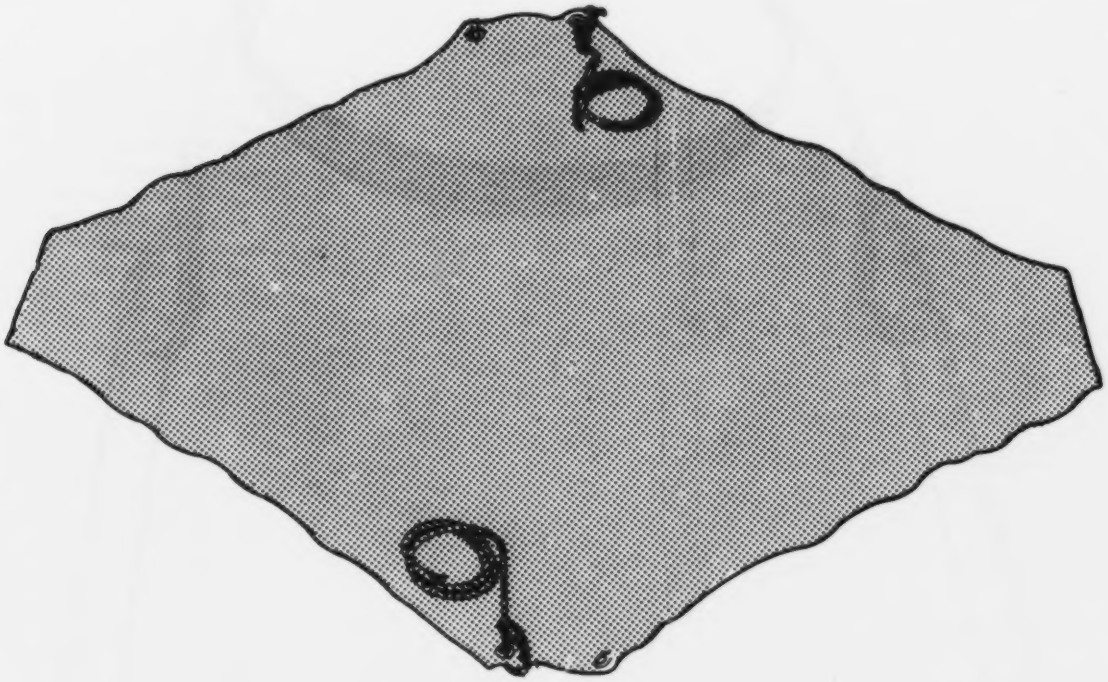


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*Figure 1-12. Cover for tent and liner sections.*

*g. Arch Spacer Assembly.* The arch spacer assembly (fig. 1-13) consists of a J-hook, L-hook, and 27-foot long connecting cable. The spacer is used to assure proper spacing of arches before anchoring.

*Figure 1-13. Arch spacer assembly.*

## 1-6. Identification and Tabulated Data

*a. Identification.* Not applicable.

*b. Tabulated Data.* Space required to erect tent: Rectangular space: 51 ft by 64 ft

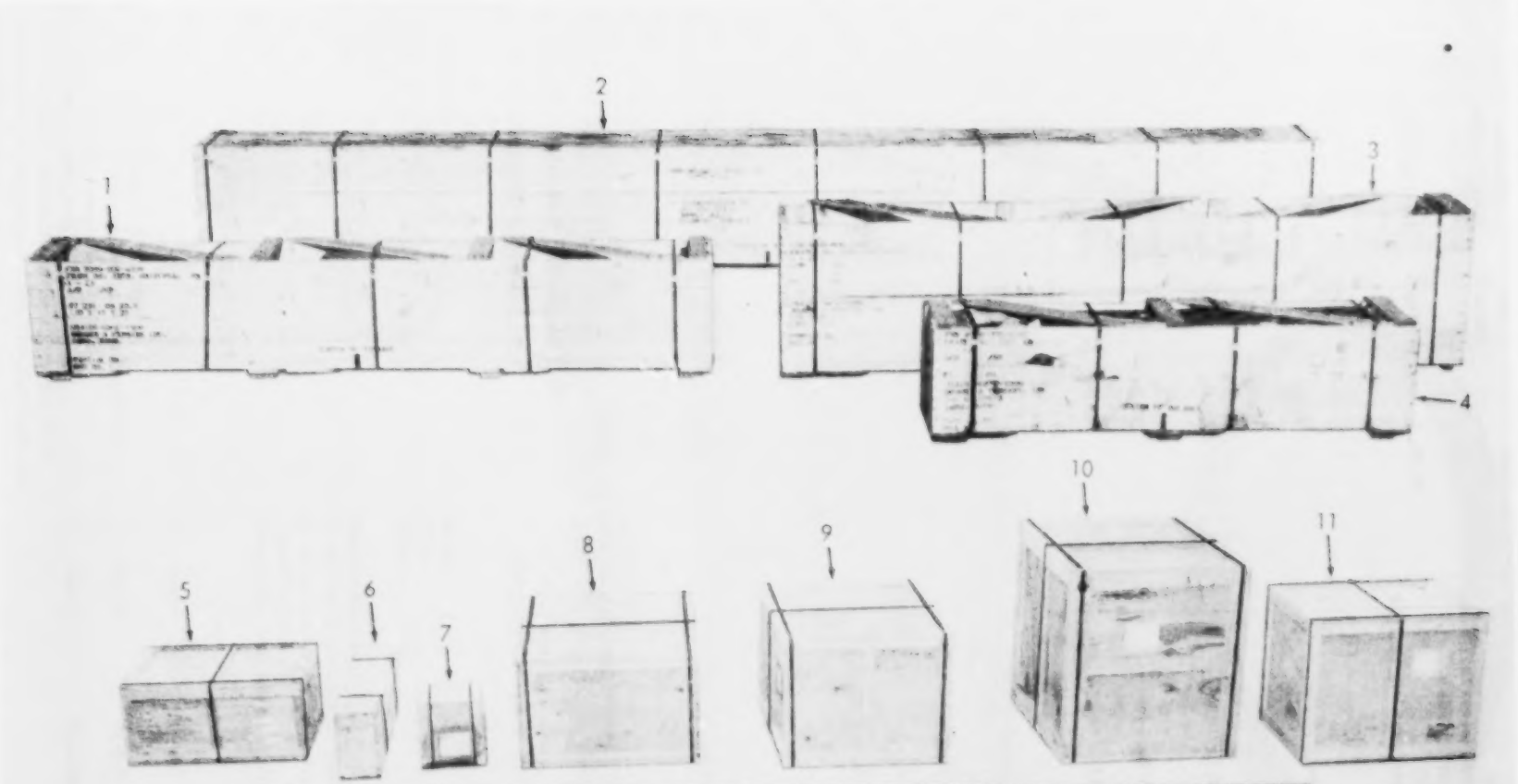
| | |
|---|---|
| Dimensions: | |
| Overall length | 64 feet |
| Overall width | 27 feet |
| Overall height | 22 feet |
| Vehicle doors: | |
| Closures | Each end section |
| Width | 12 feet with end arch purlins attached<br>20 feet at bottom with end arch purlins disconnected and door-posts moved to side |
| Height | About 20 feet with door fully opened |

| | *Weight* | *Cube* | *Dimensions* |
|---|---|---|---|
| Packaged weight and cube of frame assembly | | | |
| Package No. 1 (2 crates) Crate 1 (3, fig. 1-14) of 2 contains: 2 ea end arch ays 1 ea. intermediate arch ays | 425 lbs | 41 cu ft | 135- x 15- x 33 in. |
| Crate 2 (4, fig. 1-14) of 2 contains: 19 purlins, short, male and female ends 19 purlins, short, female ends 8 purlins, end arch 1 circuit breaker 1 light and outlet ay 6 guy wire ays 1 arch spacer 2 wrenches | 298 lbs | 27.3 cu ft | 85- x 18- x 22 in. |

| | Weight | Cube | Dimensions |
|---|---|---|---|
| Package No. 2 (2, fig. 1-14) contains: 2 ea left doorpost ays 2 ea right doorpost ays 2 ea transom chord and winch ays 14 ea door spar ays 1 ea ladder | 943 lbs | 83.6 cu ft | 249- x 21- x 28 in. |
| Package No. 3 (1, fig. 1-14) contains: 1 ea intermediate arch ay 19 ea purlin ays, long 1 ea light and outlet ay | 291 lbs | 29.3 cu ft | 135- x 15- x 25 in. |

*Note.* 7 ea of package No. 3 required for 64-ft tent.

| | Weight | Cube |
|---|---|---|
| Tent shelter consists of 3 packs: | | |
| 2 ea end wall sections (8, fig. 1-14) | 275 lbs | 19 cu ft |
| 2 ea end roof sections (9, fig. 1-14) | 296 lbs | 19 cu ft |
| 5 ea intermediate roof sections (10, fig. 1-14) | 525 lbs | 29 cu ft |
| Tent liner consists of 2 packs: | | |
| 2 ea end sections (5, fig. 1-14) | 123 lbs | 7.96 cu ft |
| 5 ea intermediate roof sections (11, fig. 1-14) | 200 lbs | 15.5 cu ft |
| Ground anchor kit (6, fig. 1-14) | 86 lbs | 2.1 cu ft |
| Tent pins consist of 1 pack (7, fig. 1-14): | 94 lbs | 1 cu ft |




| SHIPPING DIMENSIONS AND WEIGHTS | | |
|---|---|---|
| 1. 29.3 CU. FT. 291 LBS. | 5. 7.96 CU. FT. 123 LBS. | 9. 19.0 CU. FT. 296 LBS. |
| 2. 83.6 CU. FT. 943 LBS. | 6. 2.1 CU. FT. 86 LBS. | 10. 29.0 CU. FT. 525 LBS. |
| 3. 41.0 CU. FT. 425 LBS. | 7. 1.0 CU. FT. 94 LBS. | 11. 15.5 CU. FT. 200 LBS. |
| 4. 27.3 CU. FT. 298 LBS. | 8. 19.0 CU. FT. 275 LBS. | |

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*Figure 1-14. Shipping crates, with dimensions.*

# CHAPTER 2
# OPERATING INSTRUCTIONS

## Section I. SERVICE UPON RECEIPT OF MATERIEL

### 2-1. Inspecting and Servicing the Equipment

*a. New Tentage.* When a shipment of new tentage is received, inspect each package carefully for external evidence of damage in shipment. On opening a package, make a preliminary check of the contents to see that all components are present and undamaged. Make a thorough inspection of individual components and items just before and during erection of the tent. Damaged or unserviceable items that cannot be repaired by organizational maintenance personnel should be reported to designated headquarters.

*b. Used Tentage.* When used tentage is received, proceed according to above instructions, giving particular attention to inspection of each item for excessive wear and tear or other evidence of damaged or unserviceable condition.

### 2-2. Installation

*a. General.* This paragraph provides instructions for erecting the tent. The tent (64-foot length) can be erected by 12 men in about 8 hours. Level ground, high enough for drainage, should be selected for the tent site.

*b. Ground Plan.* The ground plan (fig. 2-1) is given to provide guidance for the location of the steel tent pins, arrowhead-type anchors, guy assemblies, and guy lines and to give the operator or crew a knowledge of the ground area the tent will occupy. Study the plan carefully.

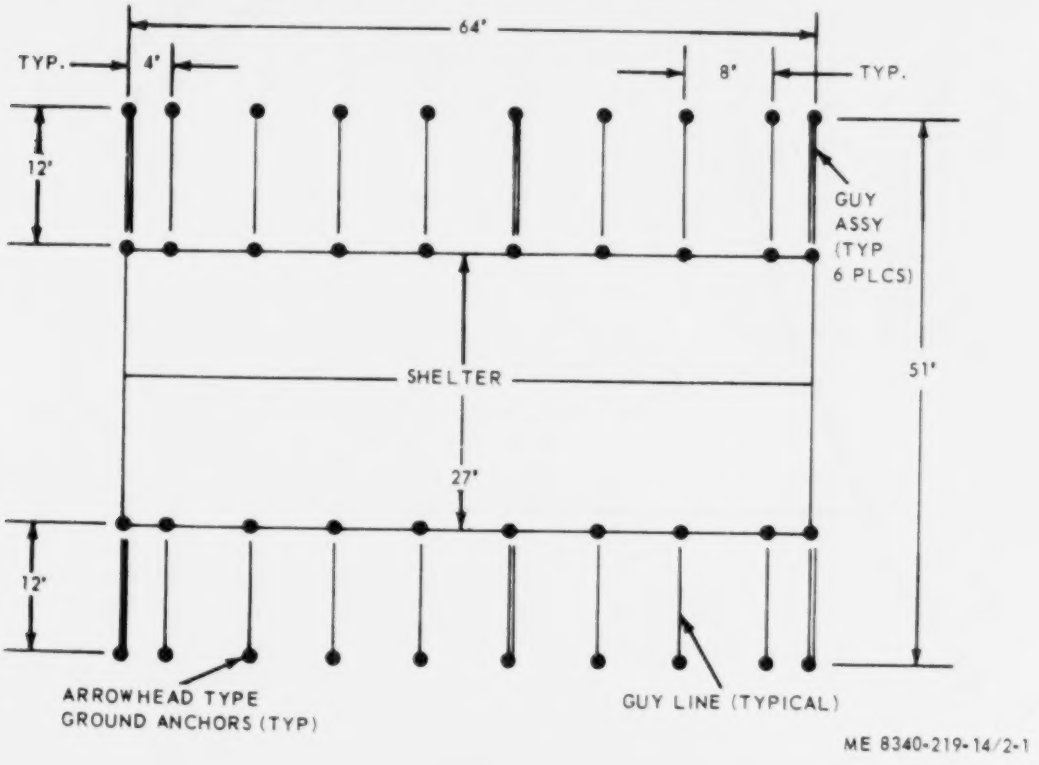


*Figure 2-1. Ground plan.*

*c. Assembling Arches.*

(1) *End arch.* To assemble either end arch, proceed as follows:

(*a*) Arrange arch segments on ground, in proper order (fig. 2-2), with the heads of the fastener purlin bolts down.

(*b*) Insert the joint of a straight segment (3 and 7) into a lower arch segment (1 and 8) and fasten with eyebolt and chain assembly (2).

(*c*) Insert the joint of an intermediate segment (4 and 6) into the straight segment (3 and 7), and fasten with eyebolt and chain assembly (2).

(*d*) Complete the arch by inserting the joints of the upper segment (5) into the intermediate segments and fasten with eyebolt and chain assembly (2).

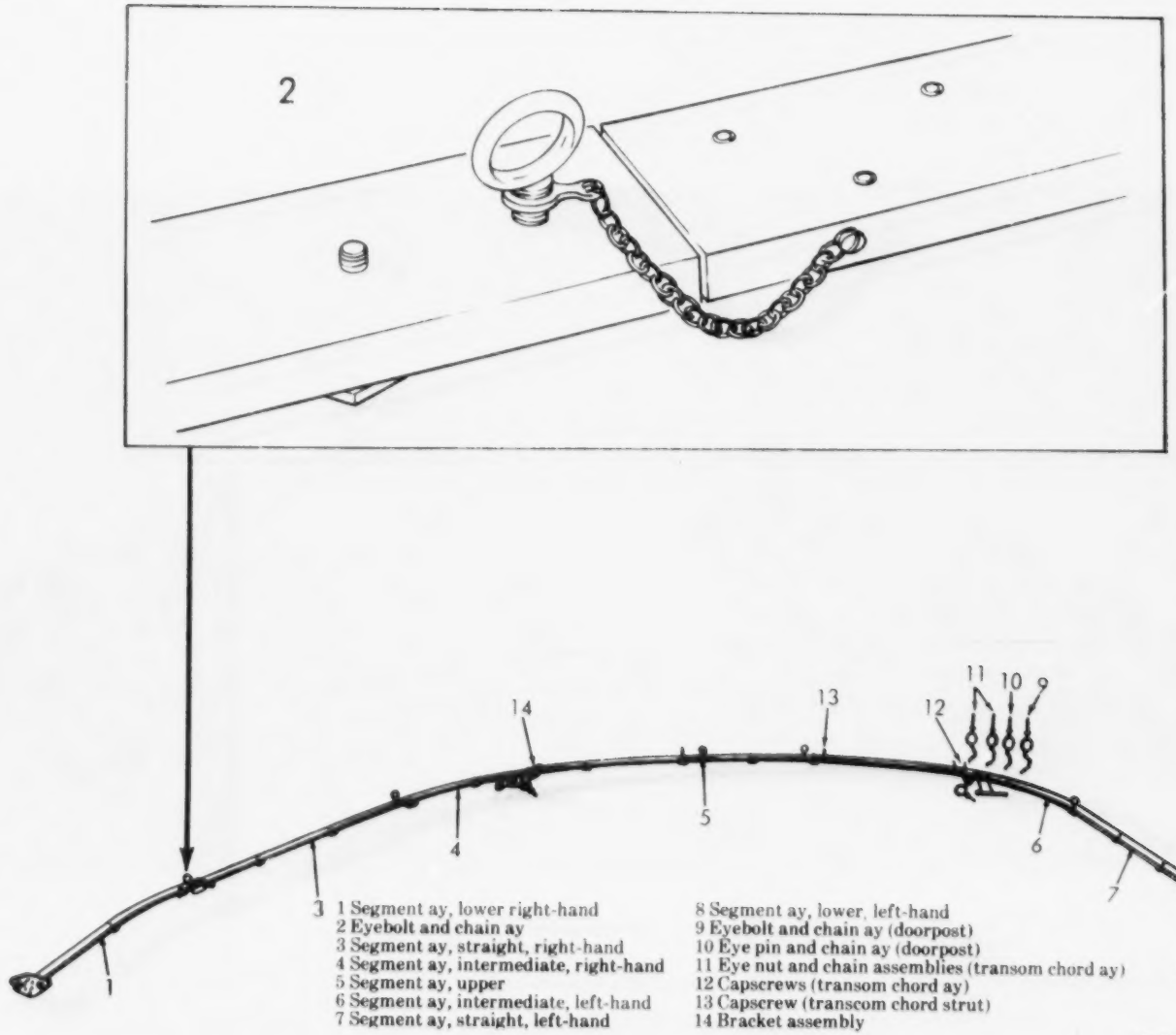


*Figure 2-2. End arch assembly.*

(2) *Installing door winch and transom chord assembly.* Place ends of transom chord and ends of transom chord struts over the captive screws (12 and 13, fig. 2-2) protruding from the intermediate arch segments, and fasten with the eye nut and chain assemblies. The winch and transom chord assembly is mounted on the arch assembly as shown in figure 2-3.

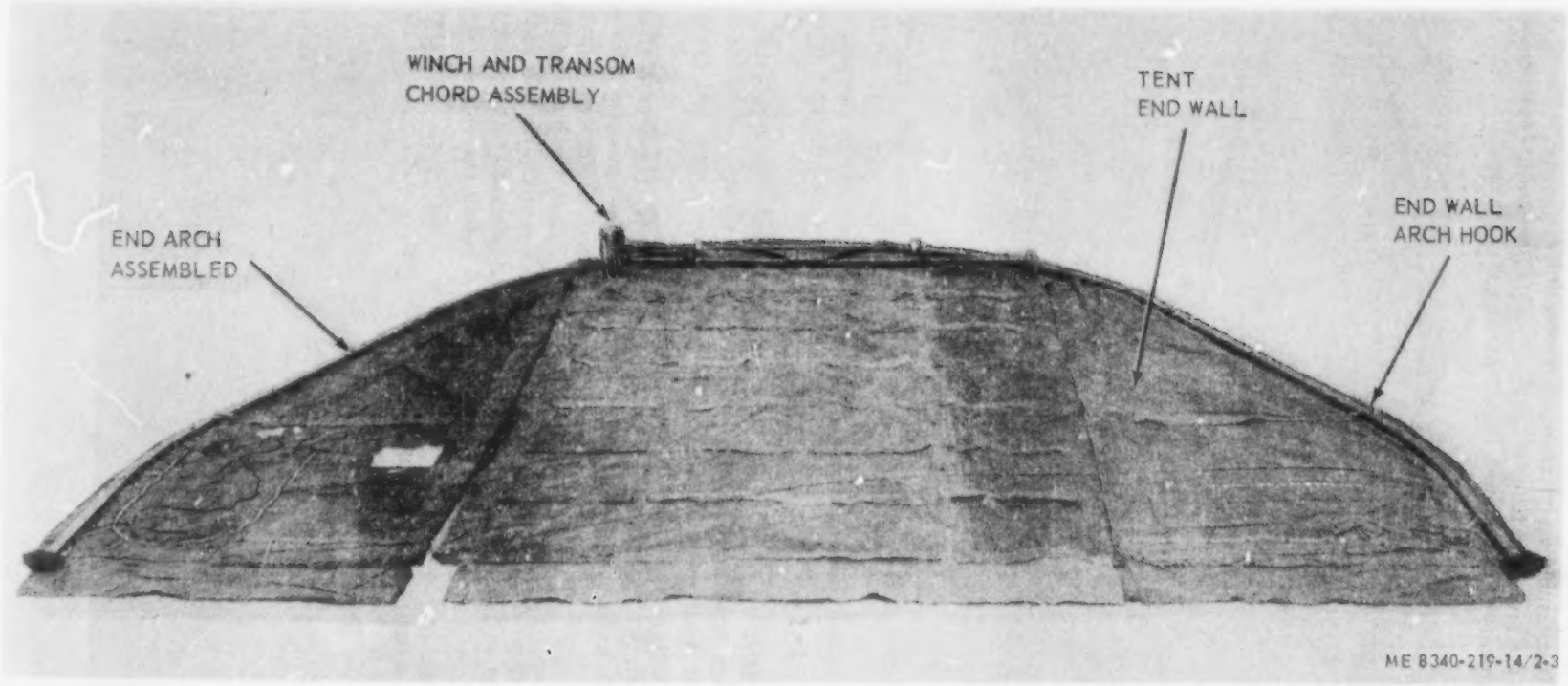


*Figure 2-3. End wall installed on end arch assembly*

(3) *Intermediate arch.* To assembly an intermediate arch, refer to figure 2-4 and proceed as follows:

(*a*) Arrange arch segments on the ground in proper order.

(*b*) Join segments as described for the end arch, paragraph *c* (1) above.

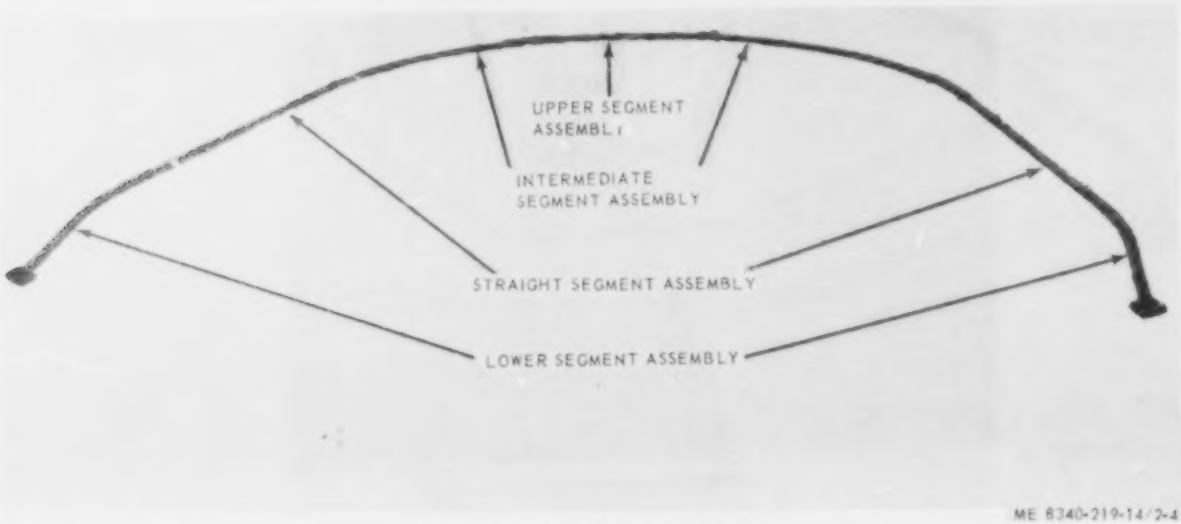


*Figure 2-4. Intermediate arch assembly.*

*d. Installing End Wall to End Arch Assembly (fig. 2-3).*

(1) Unfold and spread one tent end wall on ground with outside facing down.

**CAUTION**

**Clear area of all sharp foreign material before spreading tent wall on ground.**

(2) Place end arch assembly on end wall with fastener purlin bolts facing down.

(3) Hook end wall arch hooks over the end arch assembly.

*e. Vehicle Doors.*

(1) *Doorpost installation.* The doorposts are secured to the end arch and wall on the ground position. To install either doorpost, proceed as follows:

NOTE

The door control arm of each assembly is marked INSIDE FACE. These markings must face each other when the doorposts are erected.

(*a*) With two men handling the doorpost (fig. 2-5), insert the end wall stiffner into the receiving channel of the doorpost (fig. 2-5) and slide the doorpost up to the arch bracket assembly (fig. 2-6).

(*b*) Secure the top of the doorpost assembly to the movable socket of the end arch bracket assembly, using the eyepin and eyebolt chain assembly (fig. 2-6).

(*c*) Insert the door control arm (2, fig. 1-7) into the doorpost gusset (3); the arm slides into the gusset, no other attachment is necessary.

(*d*) Attach the diagonal door control arm (1) to the door control arm and to the top post bracket with toggle pin and chain assembly (4).

(*e*) Install the opposite doorpost in the same manner.

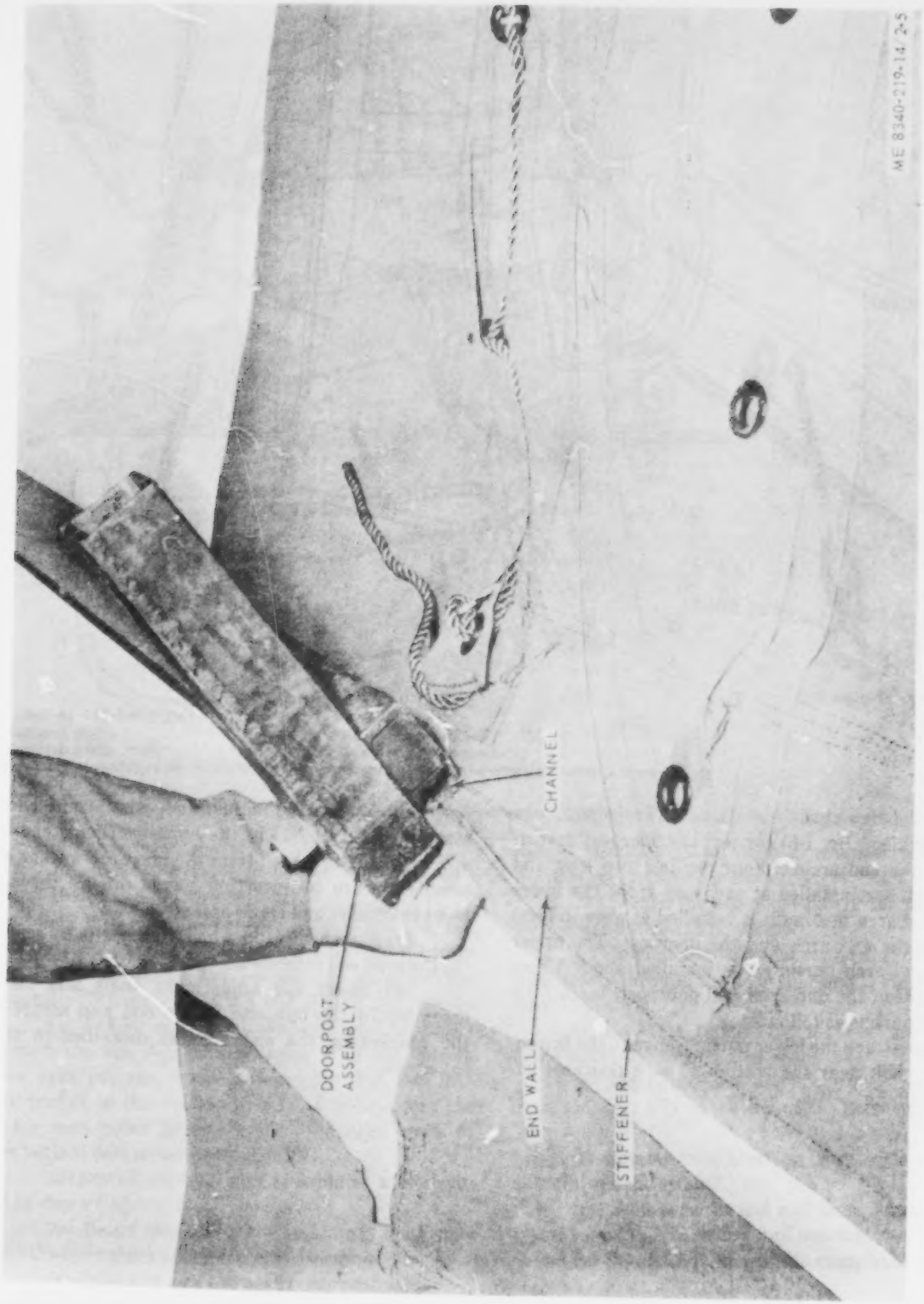


*Figure 2-5. Attaching doorpost to end wall.*

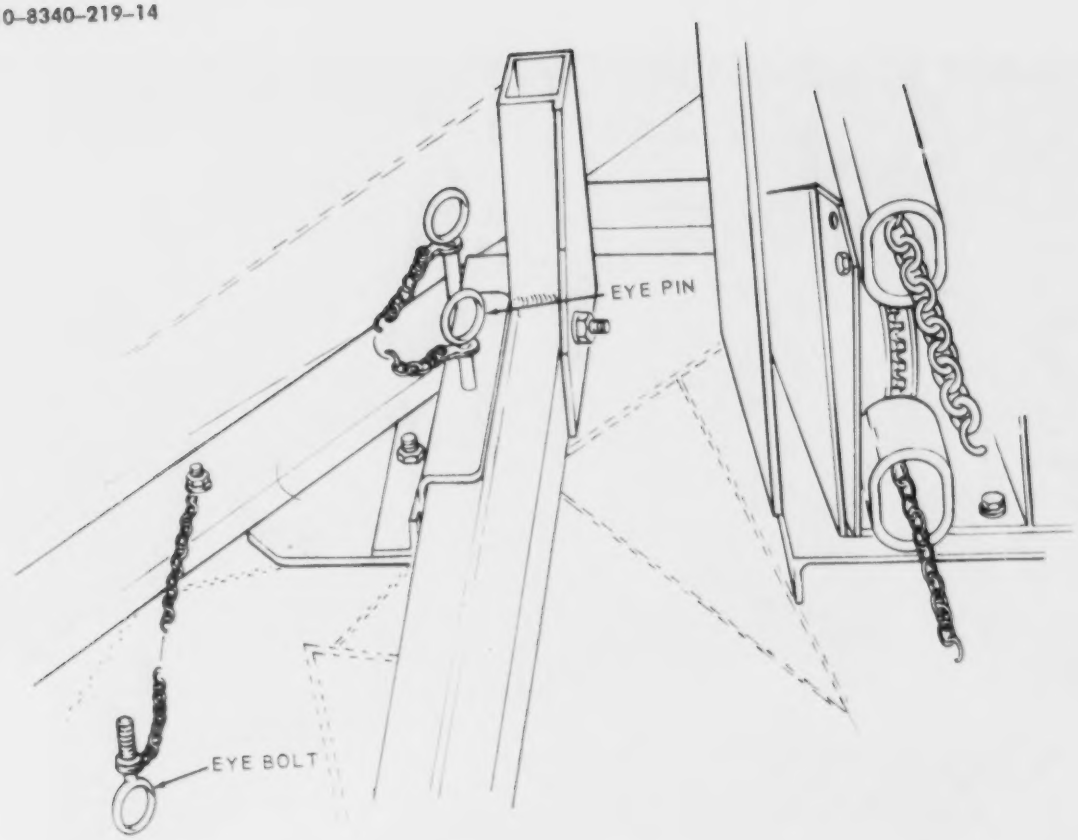


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*Figure 2-6. Securing doorpost assembly to end arch.*

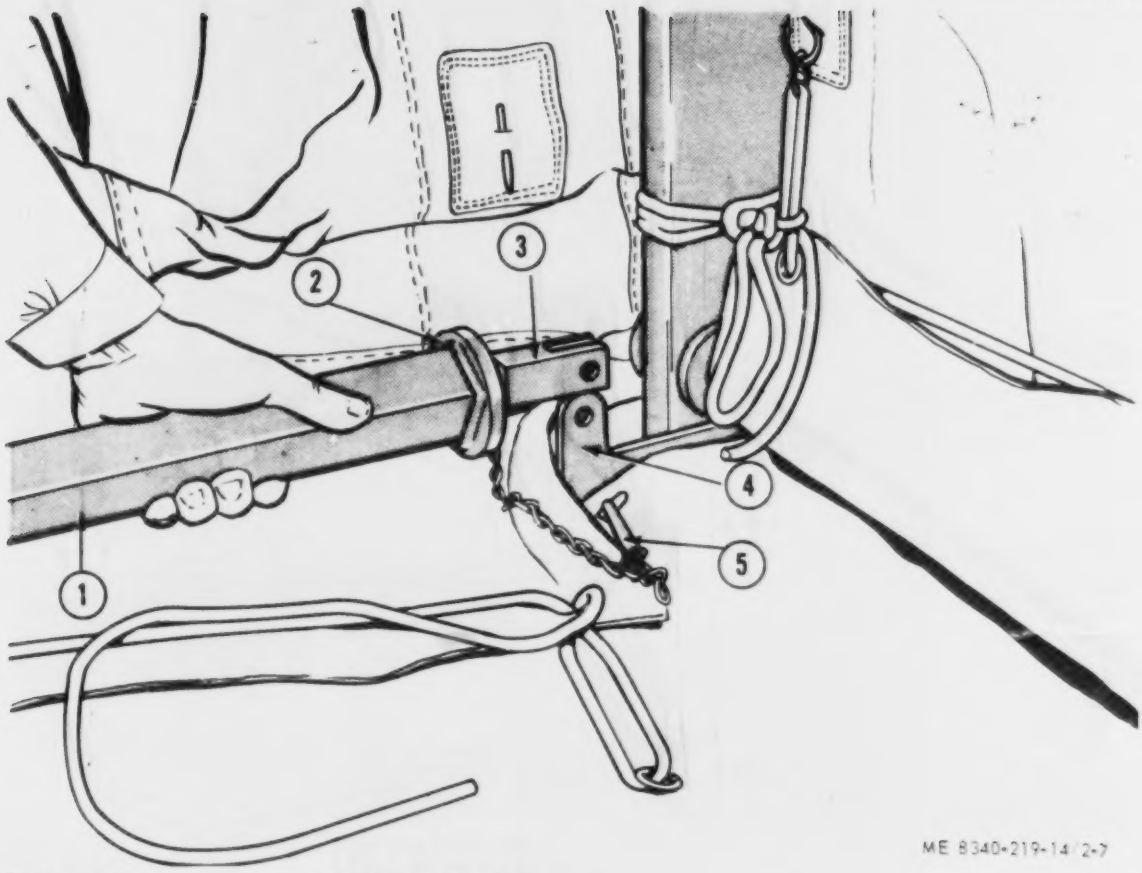
(2) *End arch purlin installation.* The end arch purlin assemblies (fig. 1-5) connect the doorpost assemblies to the end arches. Four purlins, two long and two short, are installed at each end arch. The lower (long) end arch purlin (2) is installed at ground level between the end arch and the doorpost. The upper (short) end arch purlin (1) is installed about 7 feet high between the end arch and doorpost. Install the end arch purlins as follows:

(*a*) Attach the lower purlin flange to the fastener purlin bolt near the bottom of each doorpost assembly (12, fig. 1-7).

(*b*) Insert the adjustment shaft and clevis assembly (3, fig. 2-7) in the opposite flange end (2) and fit to the bracket (4) on the end arch anchor assembly; secure by inserting toggle pin (5) through holes in bracket and clevis assembly.

(*c*) Attach the upper end arch purlin by screwing the stud end into the doorpost insert.

(*d*) Insert the adjustment shaft and clevis assembly in the opposite flange end and secure to the bracket on the end arch as described in step (*b*), above.




1 End arch purlin
2 End arch purlin flange
3 Adjustment shaft and clevis assembly
4 End arch anchor bracket
5 Toggle pin and chain assembly

*Figure 2-7. Installing lower end arch purlin assembly.*

(3) *Door spar installation.*

*(a)* Raise the top end of the arch assembly about 18 inches and block suitably.

*(b)* Pull down chain bolt control rod (10, fig. 1-7) on each doorpost to unlock chain bolts (8) from the strike plates (6) and release the doorpost top assembly (7) to open the track (fig. 2-8).

*(c)* Accordion-fold the tent end wall assembly toward the top (fig. 2-8). Starting with the bottom door spar pockets, insert a door spar (fig. 2-9) into the pocket of the vehicle door, and then insert the nylon spar roller assembly into the open track of the bottom post assembly (fig. 2-10).

*(d)* Install six door spar assemblies as described in step *(c)*, above.

*(e)* Insert the seventh (remaining) door spar into the open track of the top post assembly.

*(f)* Close and lock the upper doorpost assembly, making sure the locks are closed.

*(g)* Grasp the bottom door spar, and pull the door assembly down as far as it will go; check to insure that all roller spar assemblies are tracking properly in the door channels.

*(h)* Secure the top door spar in the top pocket and secure with snap fasteners.

*(i)* Unwind the hoist cable and thread the end alternately through the door spar and D-rings attached to the fabric.

*(j)* Lock the toggle (fig. 2-11) of the hoisting cable under the bottom door spar.

*(k)* Secure the loose end of the door control arm rope (15, fig. 1-7) to the top of the door control arm (2).

*(l)* Remove the blocking and lower the arch assembly to the ground.

*(m)* Secure the six end wall securing straps (fig. 2-11) around the transom chord assembly.

*(n)* Figure 2-11 shows the completed end arch section.

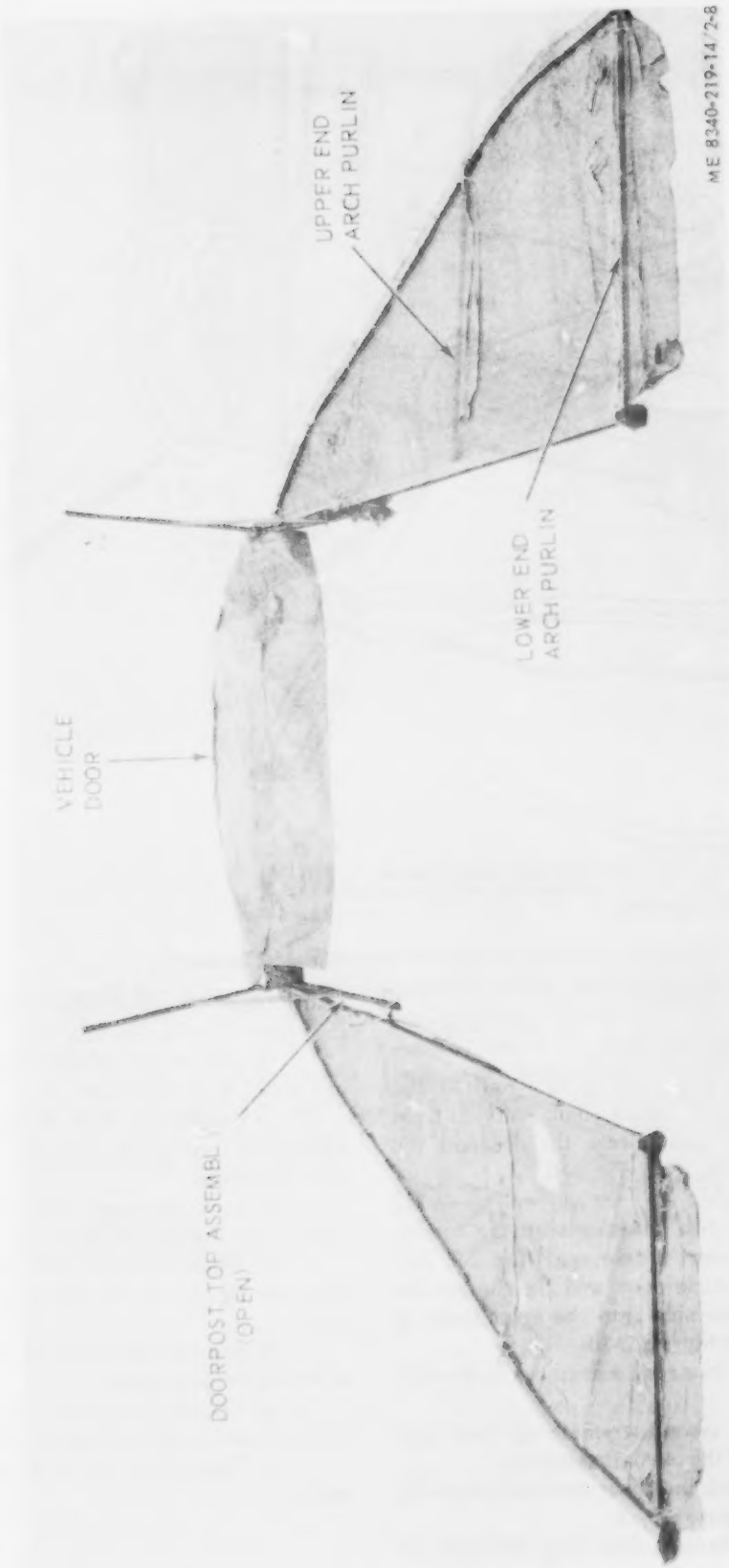



*Figure 2-8. Opening doorpost top assembly*

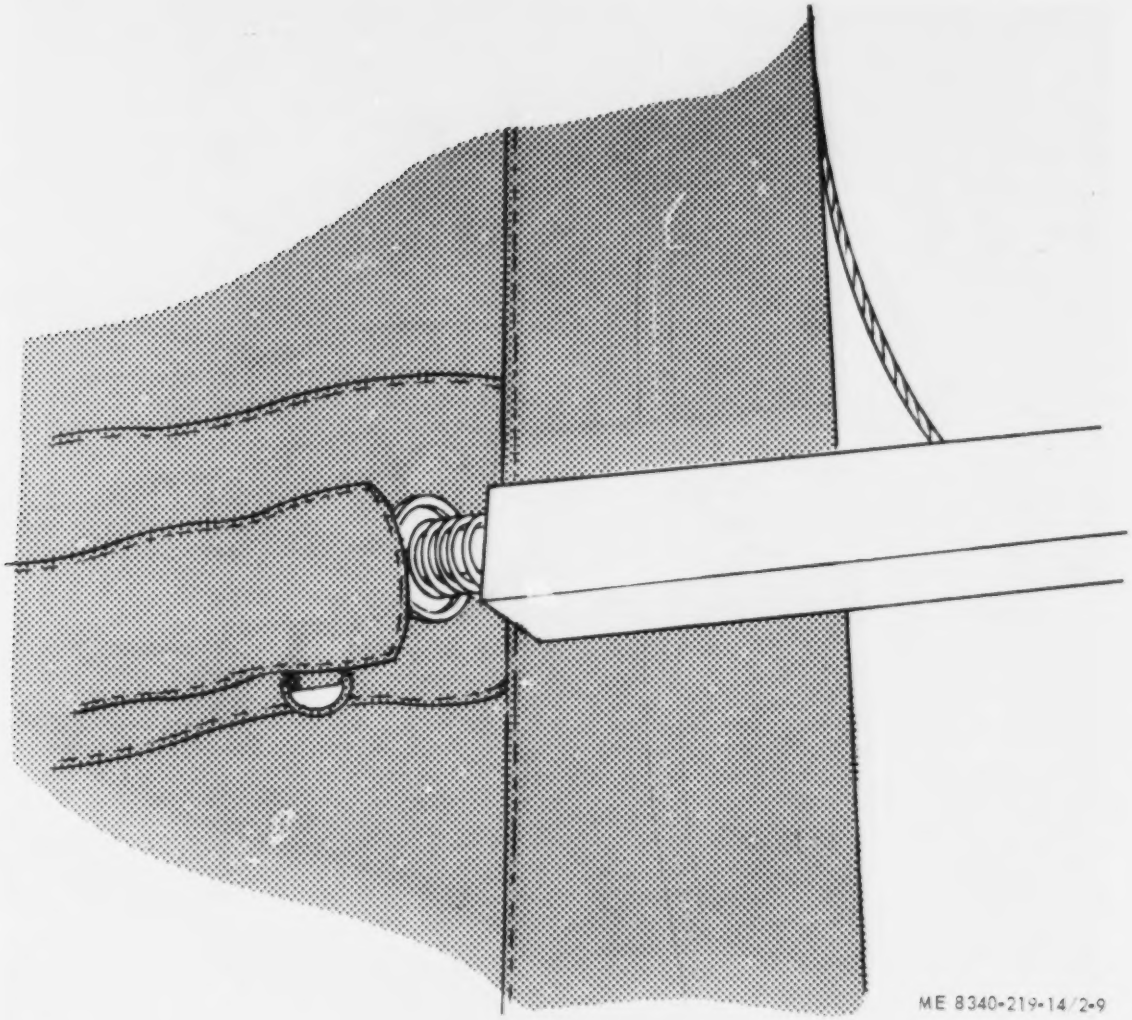



*Figure 2-9. Inserting door spar assembly.*

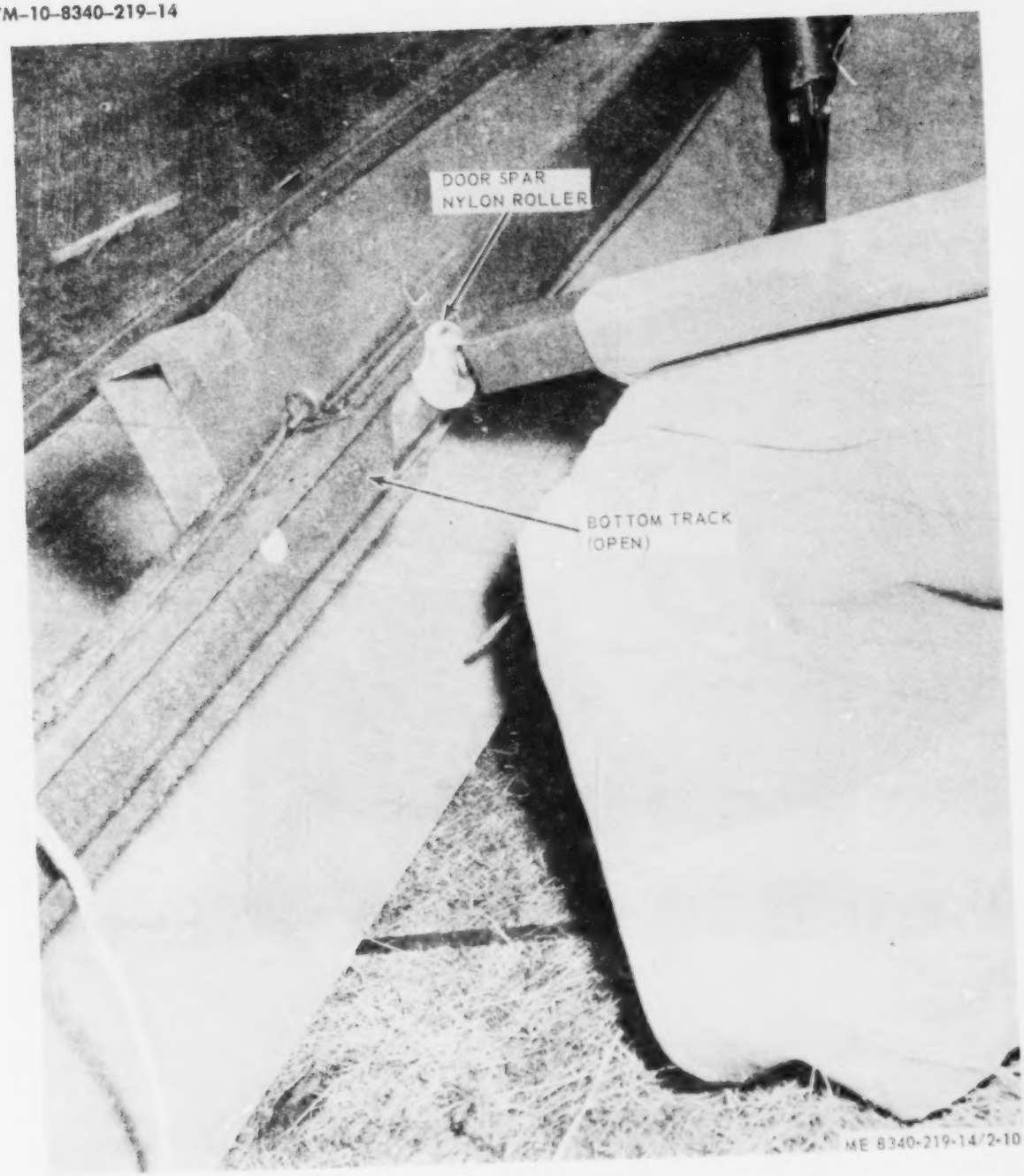



*Figure 2-10. Inserting door spar rollers.*

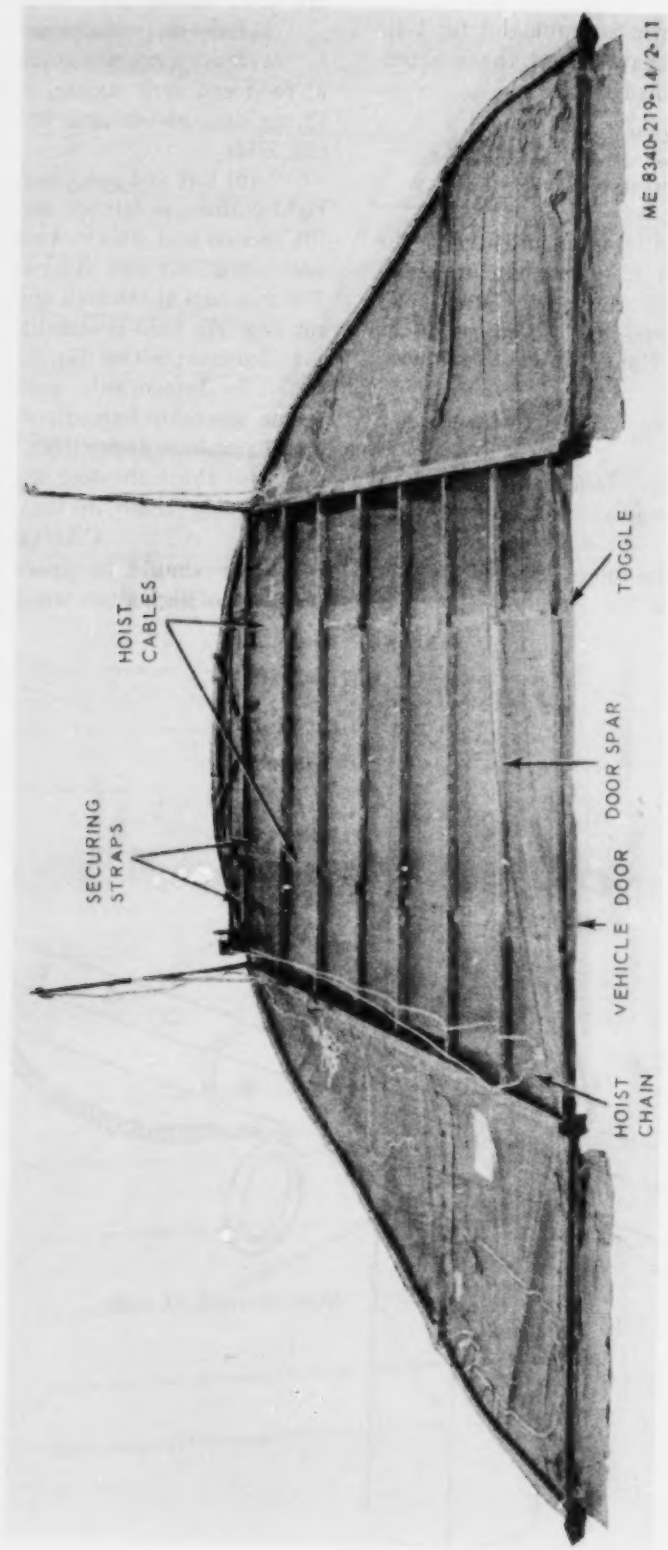



*Figure 2-11. Completed end arch section.*

*f. Assembling Frame.*

(1) Attach 19 short purlin assemblies (3, fig. 1-4), both flanged ends of which have inserts, to the fastener purlin bolts of an assembled end arch.

NOTE

Be sure to start frame assembly with the short purlins inserts on both ends; they are banded yellow.

(2) Place an assembled intermediate arch on the short purlins. Insert studs of 19 long purlin assemblies (1, fig. 1-4), through the purlin stud holes in the intermediate arch and into the inserts of the short purlins (fig. 2-12). Hand-tighten all connections.

(3) Fabricate three lines, about 50 feet long, from 1/2-inch diameter rope.

(4) Secure a line on each side of the transom chord and pass it over the intermediate arch to the bottom of the arch (fig. 2-13).

(5) Secure a line to the top of the end arch assembly (fig. 2-13); this is the stabilizer line. Figure 2-13 shows end section ready for erecting.

(6) Raise end sections as follows:

(*a*) Station six men at top section of arch; one man at each end arch anchor, two men at each bottom lifting line, and a man at the top stabilizing line (fig. 2-14).

(*b*) Lift and pull the frame section into an upright position as follows: six men (three on each side) lift section and walk toward the bottom of the end arch while four men pull on the bottom lifting lines. The two men at the arch anchors and the man at the top rope are used to stabilize the frame section as it is raised into position (fig. 2-15).

(*c*) Temporarily anchor this section of the frame assembly immediately, using the lifting and stabilizing lines as guy lines.

(*d*) Hoist the door assembly open and secure the hoisting chain in the chain hook (fig. 2-16).

**CAUTION**

**Door should be opened immediately in case of high gusty winds.**

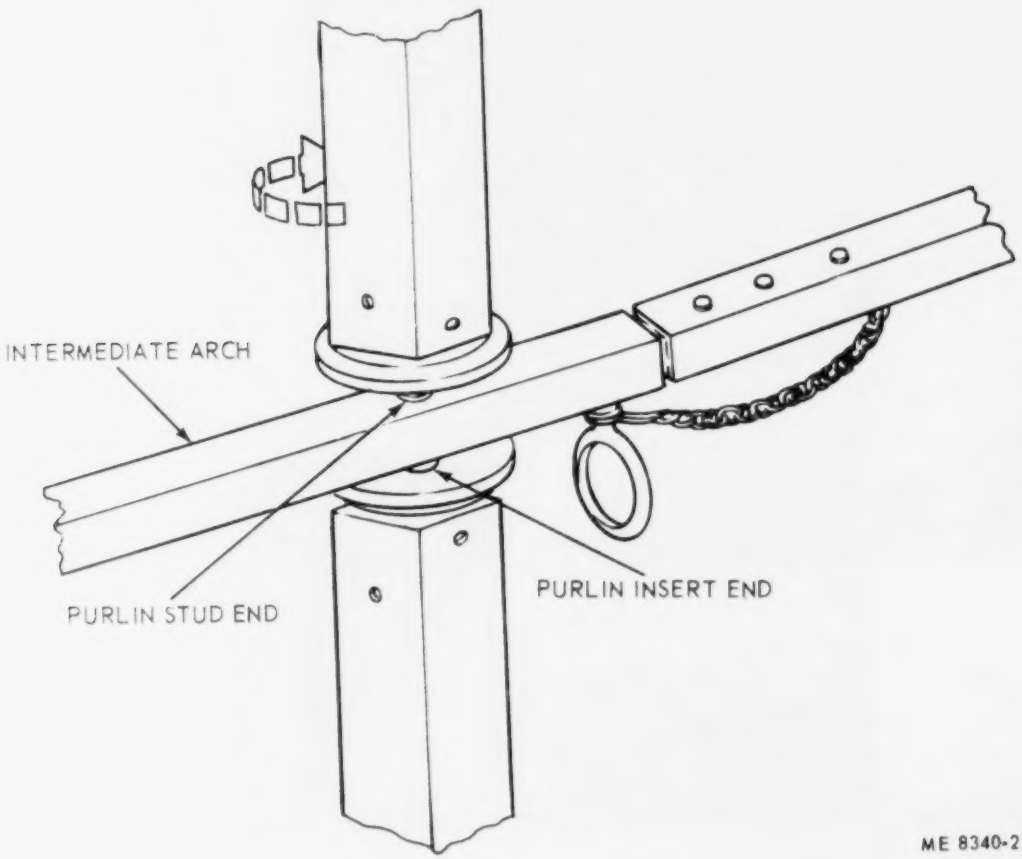



*Figure 2-12. Connecting purlins through arch.*

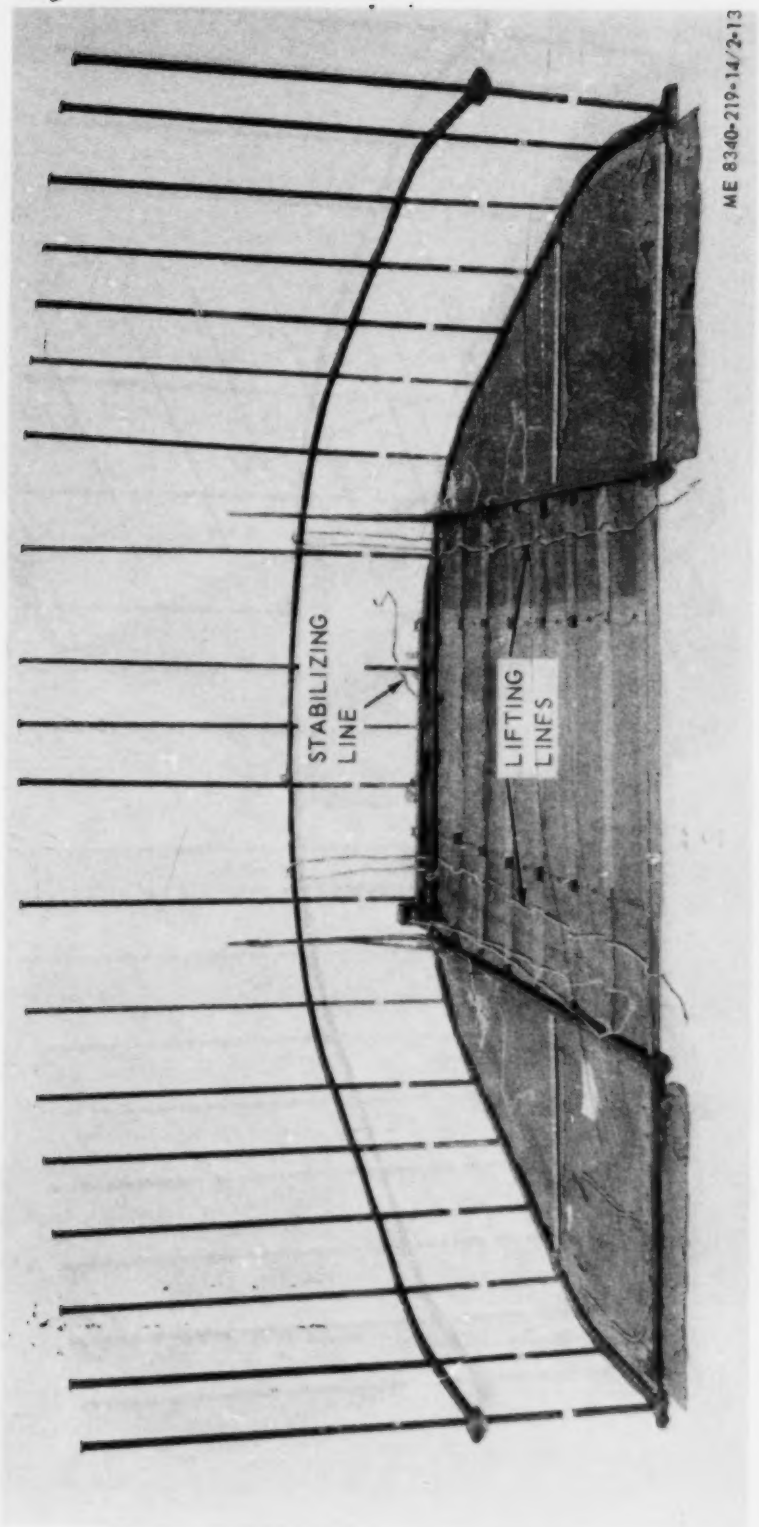



*Figure 2-13. Assembled end arch.*

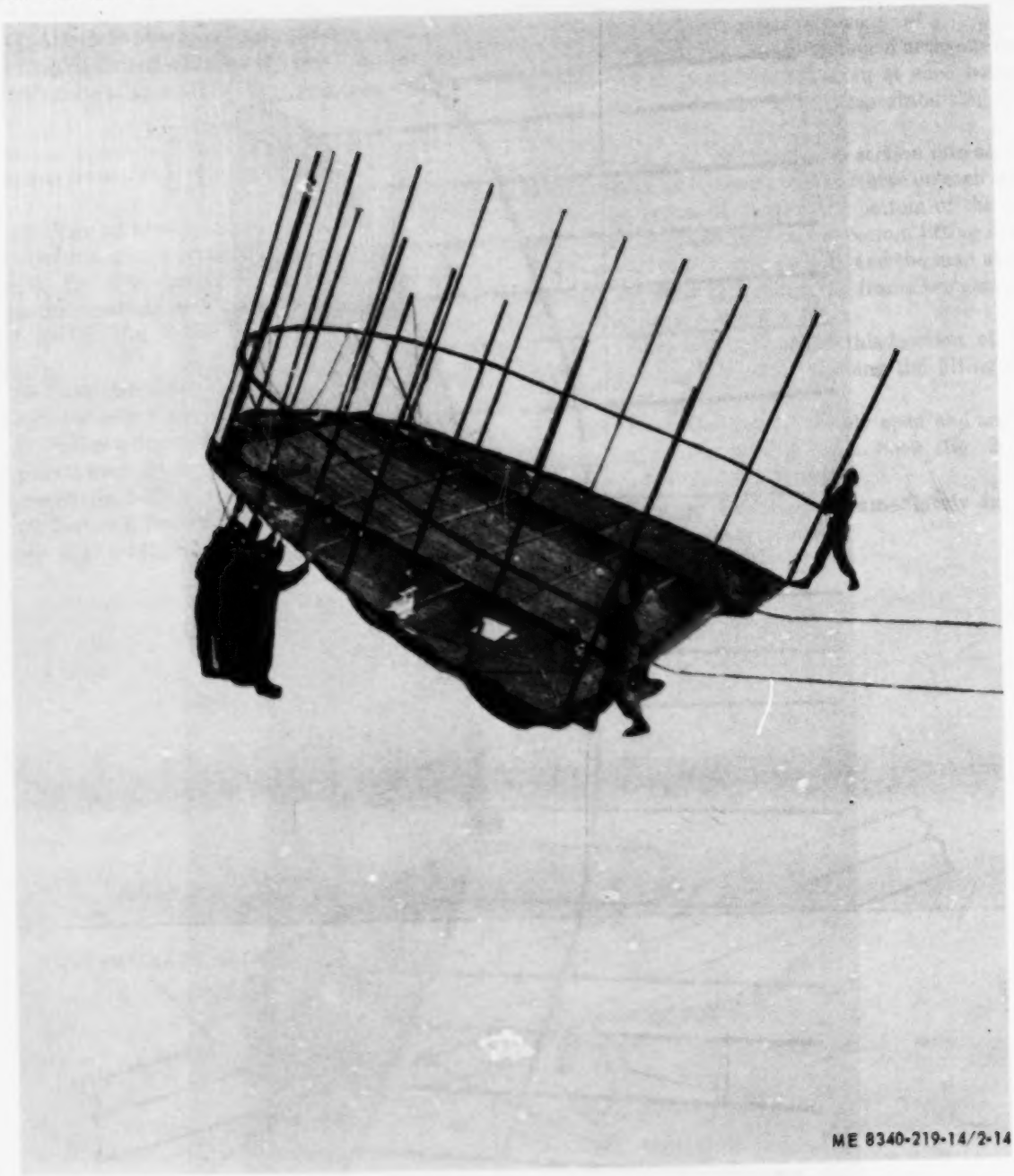



*Figure 2-14. Raising frame end section, step 1.*

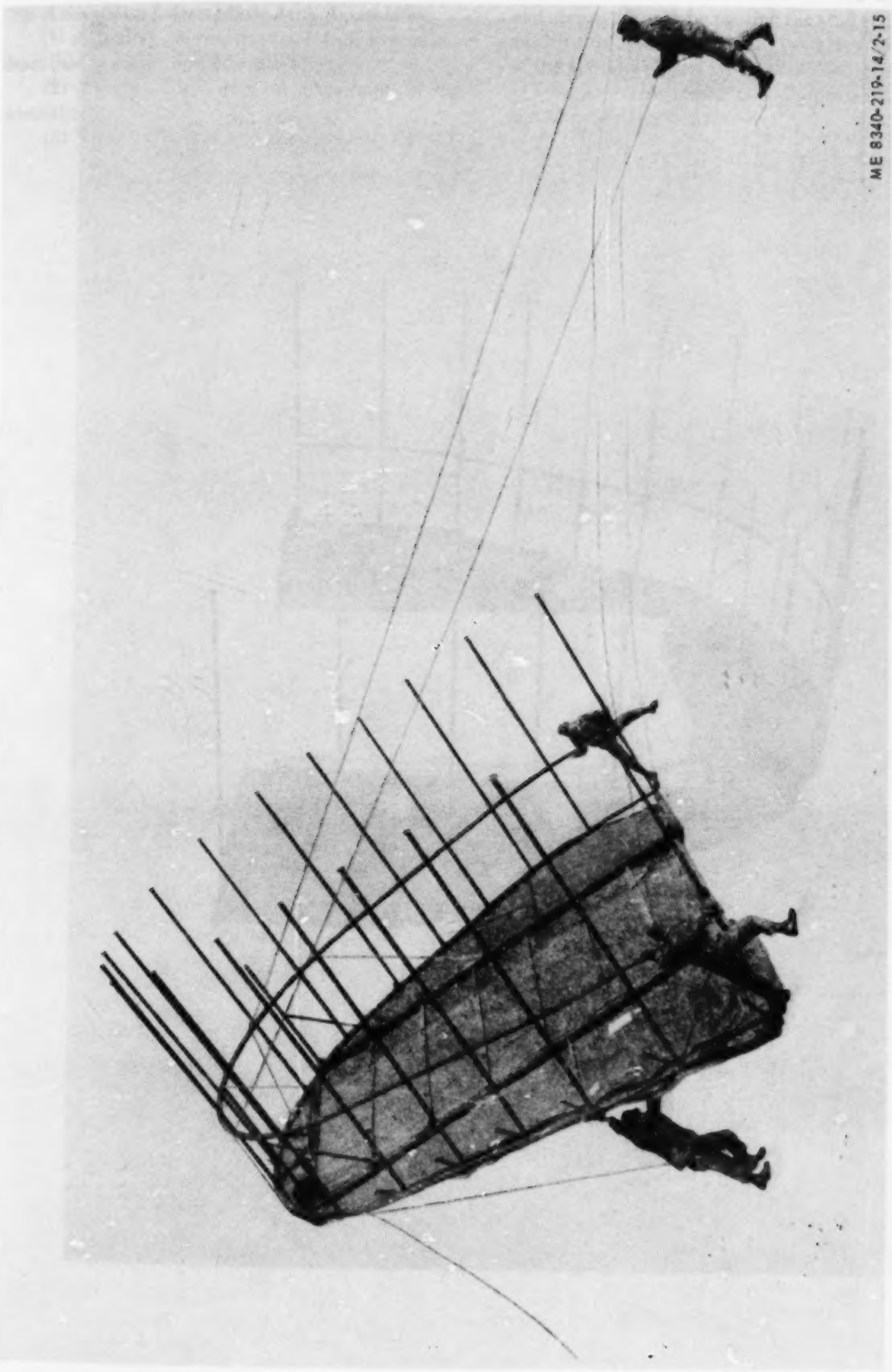



*Figure 2-15. Raising frame end section, step 2.*

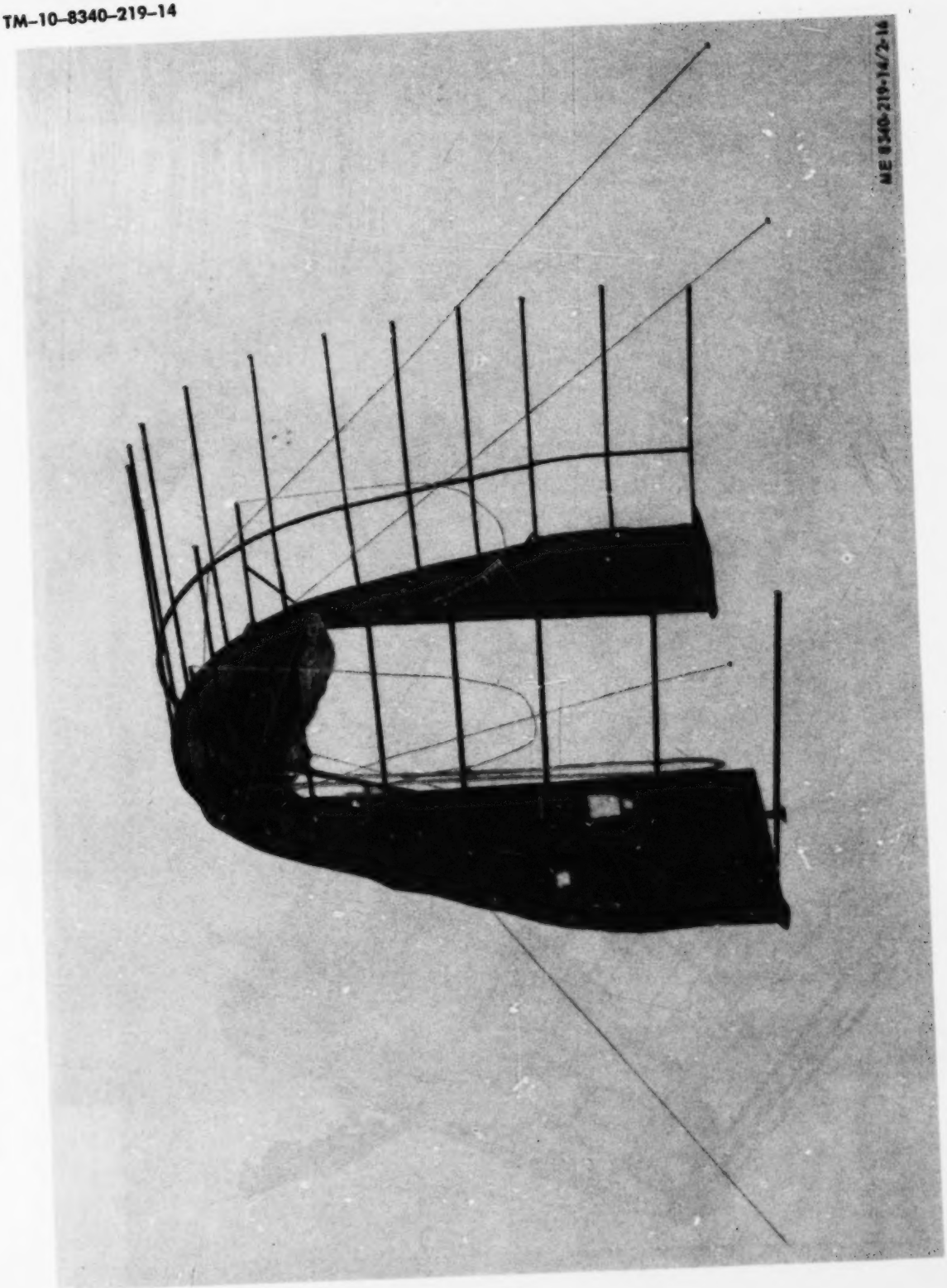



*Figure 2-16. Frame end section raised and temporarily anchored.*

*g. Assembling Intermediate Arch Assemblies.*

(1) Assemble an intermediate arch assemble as described in paragraph 2-2*c* (3) above.

(2) Position two men at each side of arch assembly.

(3) Raise arch into upright position (fig. 2-17), and secure the arch by passing the stud end of the long purlin through the arch and fastening to the insert of the opposite purlin.

(4) Assemble remainder of intermediate arch assemblies as described above.

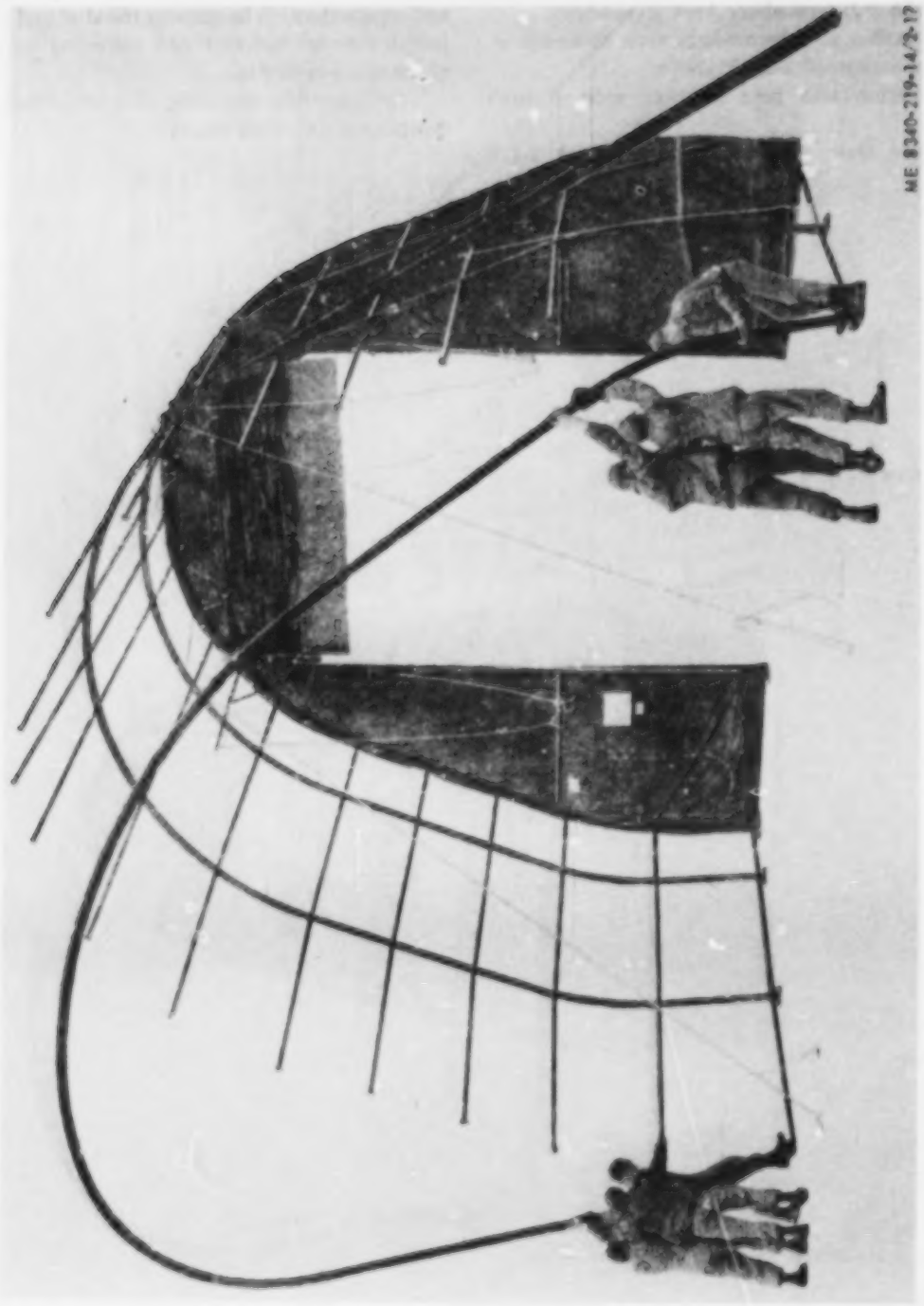



*Figure 2-17. Raising intermediate arch.*

*h. Assembling Opposite End Arch to Frame.*

(1) Assemble end arch (para. 2-2*c* (1)), end wall (para 2-2*d*) and vehicle door (para 2-2*e*).

(2) Tie two lifting lines about 50 feet long to the top of the end arch assembly and pass the lines over the top of the assembled intermediate arch on the frame assembly (fig. 2-18).

(3) Unlatch doorpost chain bolt so that upper door control arm is partially down to permit passage under intermediate arch.

(4) With four men lifting arch, two on each side, and two men pulling on each lifting line, raise the arch into position and secure to purlins with the fastener purlin bolt.

(5) Close upper doorpost and raise and secure vehicle door.

(6) Refer to figure 1-3 for view of completely assembled frame.

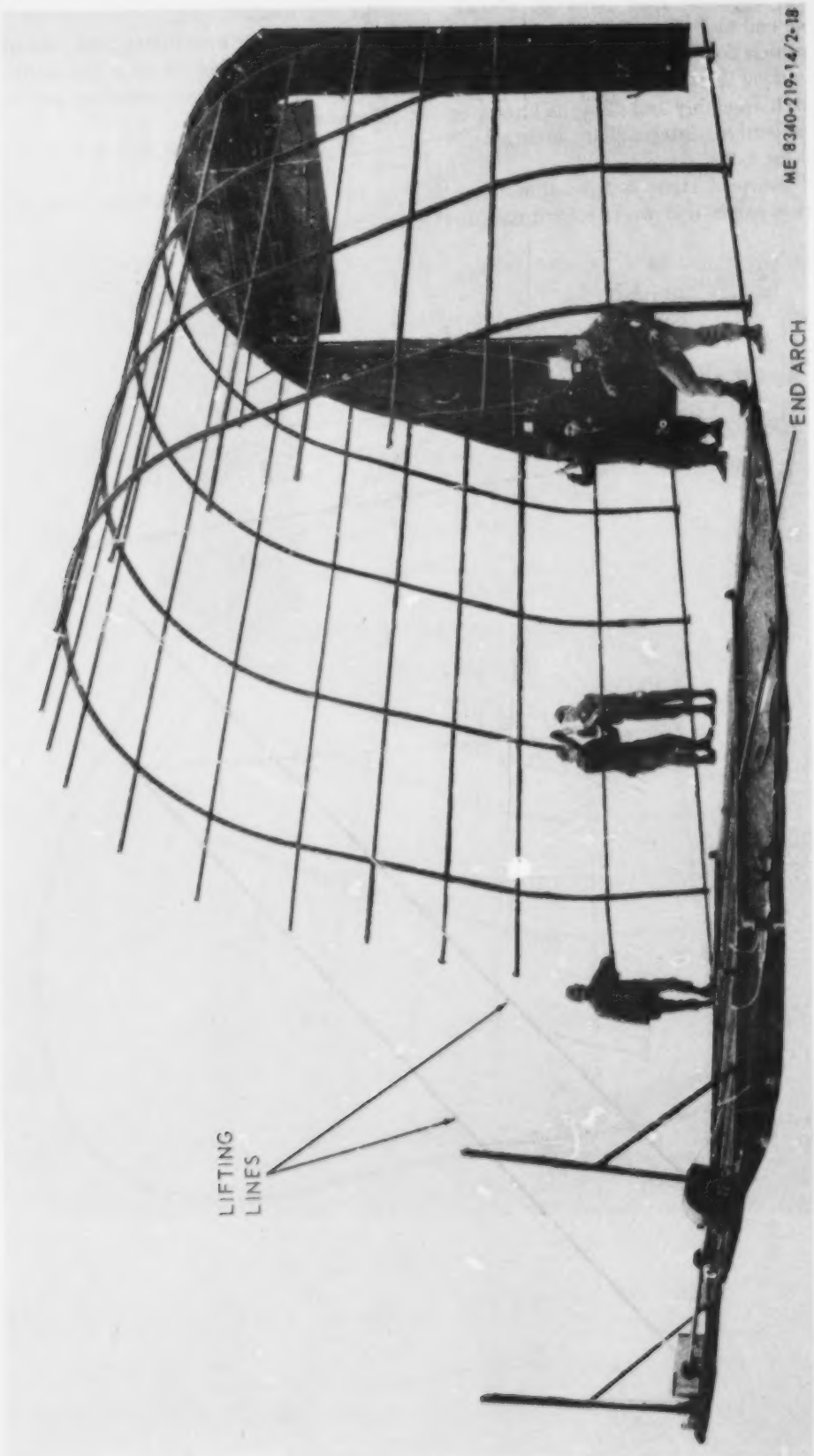



*Figure 2-18. Raising opposite end arch.*

*i. Alining and Securing Arch Anchors.*

(1) *Alining arch.* Aline each arch with the arch spacer assembly (fig. 1-13). Fasten the J-hook of spacer to one side of an end arch, and the L-hook to the other. Adjust the arch until the arch spacer cable is tight.

(2) *Securing arch anchors.* Secure each arch anchor to the ground with two tent pins and an arrowhead-type anchor (fig. 1-9). Two men are required to drive the arrowhead - type anchors. One man holds the driving rod holder and driving rod; another drives the anchor. Each anchor should be driven at least 2 feet and not more than 2-1/2 feet into the ground. Secure each arch anchor as shown in figure 2-19.

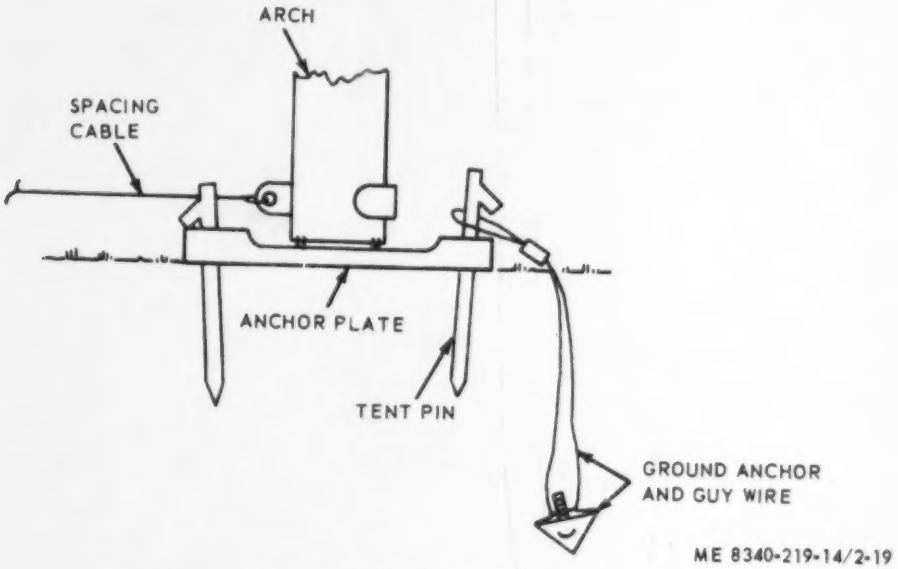



*Figure 2-19. Securing arch anchors to ground.*

*j. Attaching Roof End Sections (Outer Fabric) to Frame.* To attach the tent roof end sections to the tent frame, raise the door as far as it will go; open the top doorpost in a horizontal position as far as it will go, and proceed as follows:

(1) Spread a roof end section (12-foot wide section) and fold into two stacks so that the bottom ends are on top (fig. 2-20).

(2) Position this section inside of tent under center top purlin and with the short purlin flaps toward the end arch (fig. 2-20).

(3) Attach one lifting line, about 40 feet long, to each corner of tent section, and pass all four lines through the same center top purlin spacing; bring two lines down each side of frame (fig. 2-21).

(4) Station four men on top-side of frame assembly (two on each side) and one man at end of each lifting line.

(5) Raise one end of the roof end section through the top center purlins and over the frame. The men on top of the frame will assist by preventing the fabric from snagging on the purlins.

(6) Raise the other end in the same manner (fig. 2-22). Remove lifting lines.

(7) Work the ends of the roof section together toward the first intermediate arch assembly (fig. 2-23). The roof section will remain in this position until the liner is raised and secured.

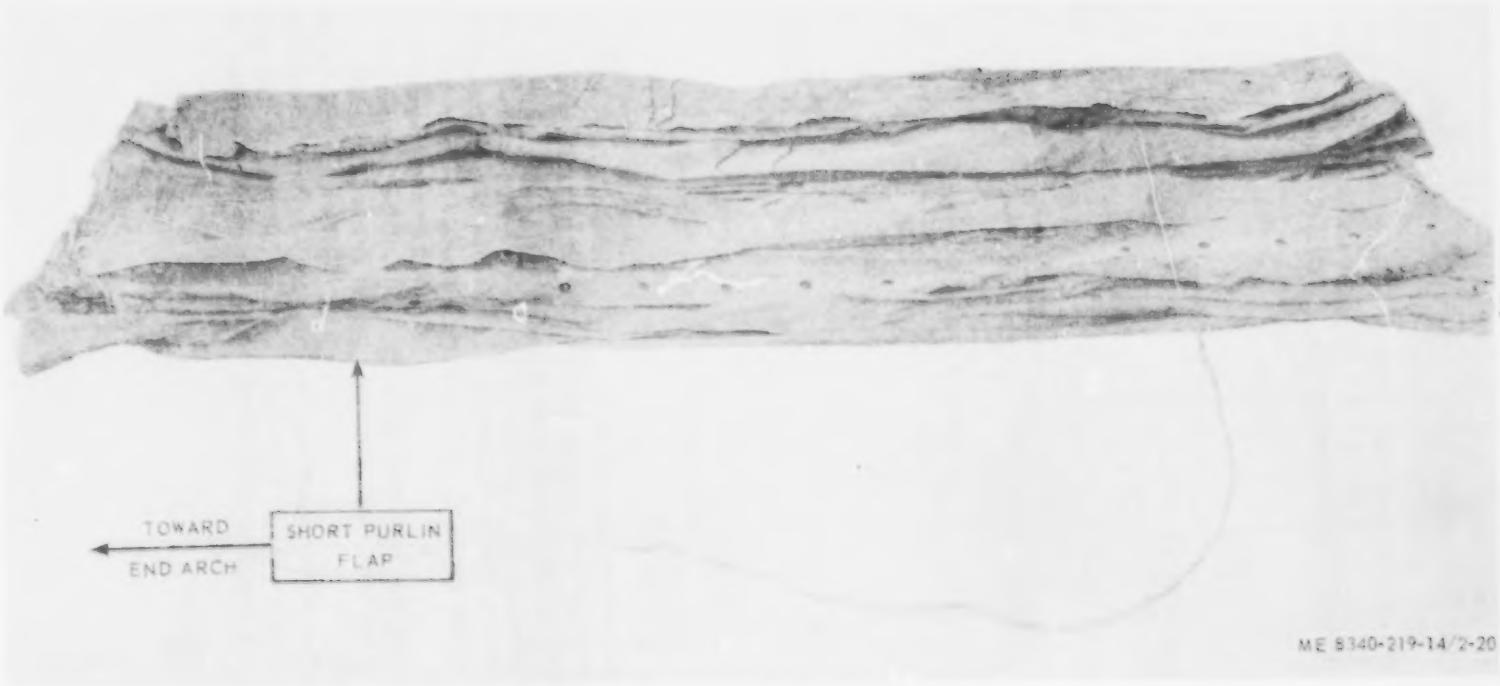



*Figure 2-20. Roof end section (outer fabric) folded for installation*

*Figure 2-21. Preparing roof end section (outer fabric) for installation.*

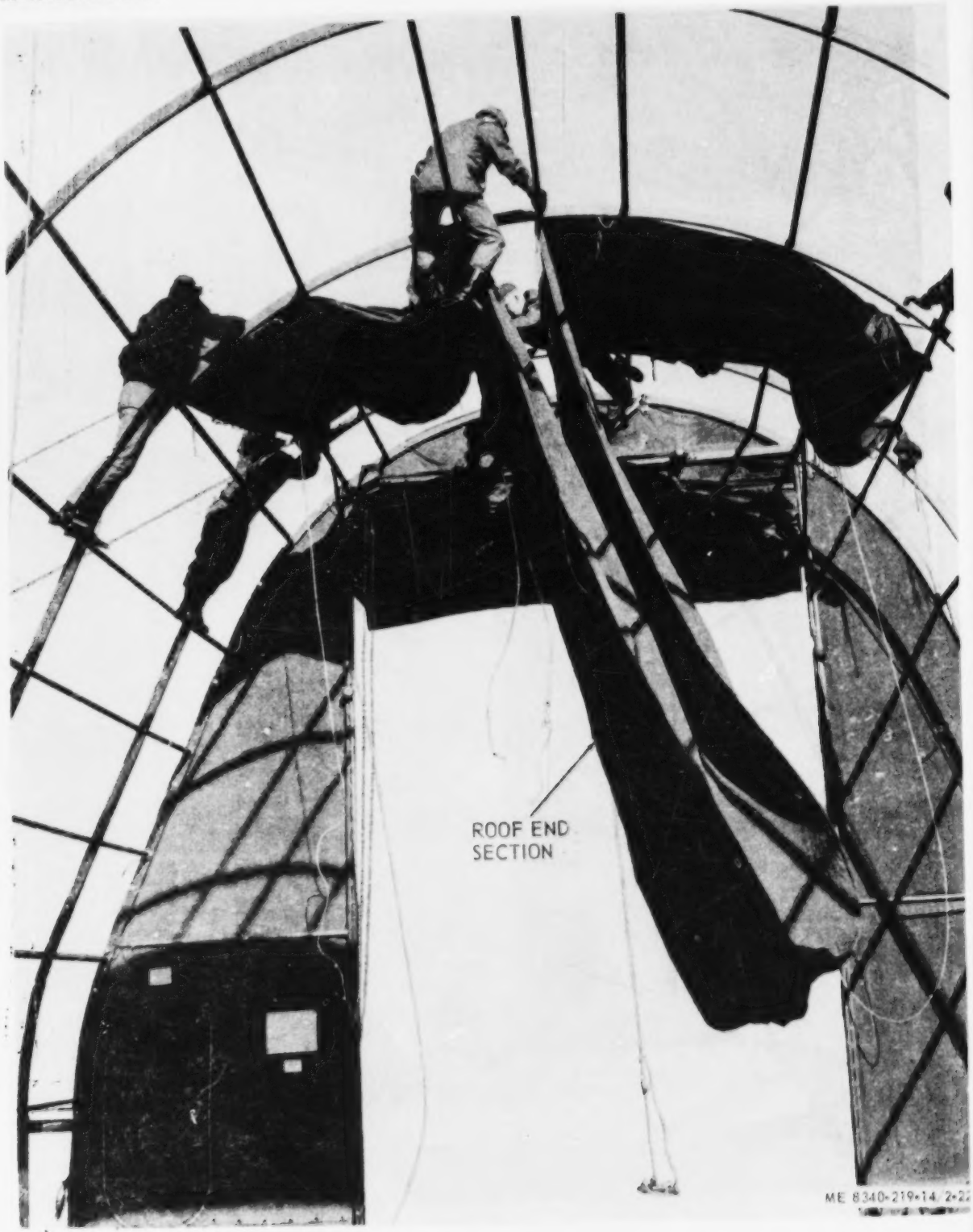



*Figure 2-22. Raising roof end section (outer fabric).*

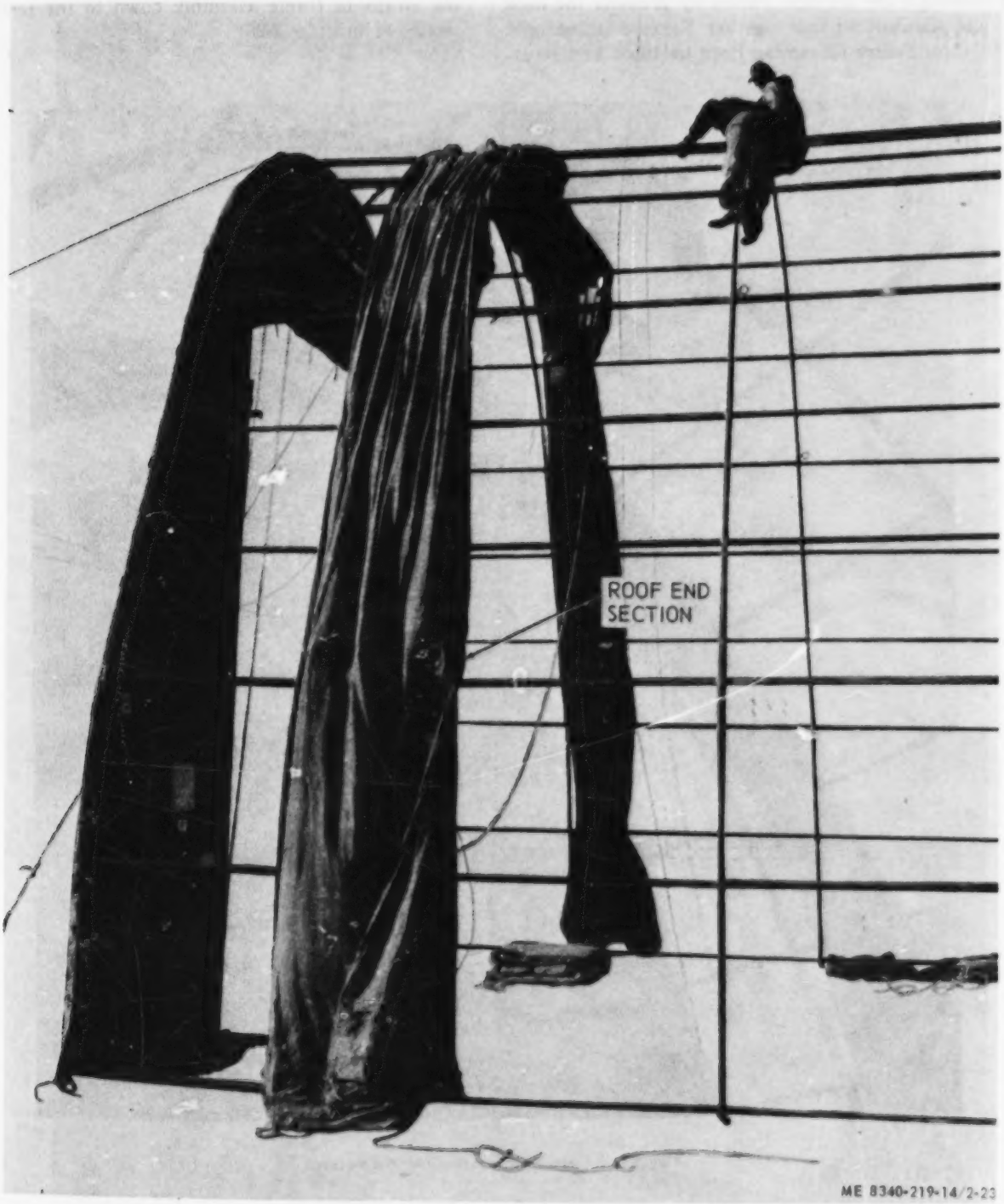



*Figure 2-23. Roof end section (outer fabric) over frame.*

*k. Raising Liner End Sections.*

(1) Spread a liner end section (12-foot section) inside tent with tie tapes facing up.

(2) Tie two lines, one at each center end of the liner, and pass the lines through the center purlins and over one side of the frame assembly.

(3) Raise the liner to the top of frame and secure center of liner to the top center purlin with tie tapes (fig. 2-24). Secure the ends of the liner by passing securing straps over and around the arches and

thorough the D-rings. Fasten by pressing the hook and pile fastener tape together. Remove lifting lines.

(4) Secure remaining liner tie tapes and securing straps to frame assembly down to the screen section of liner (fig. 2-25).

*Figure 2-24. Raising and securing liner end section.*

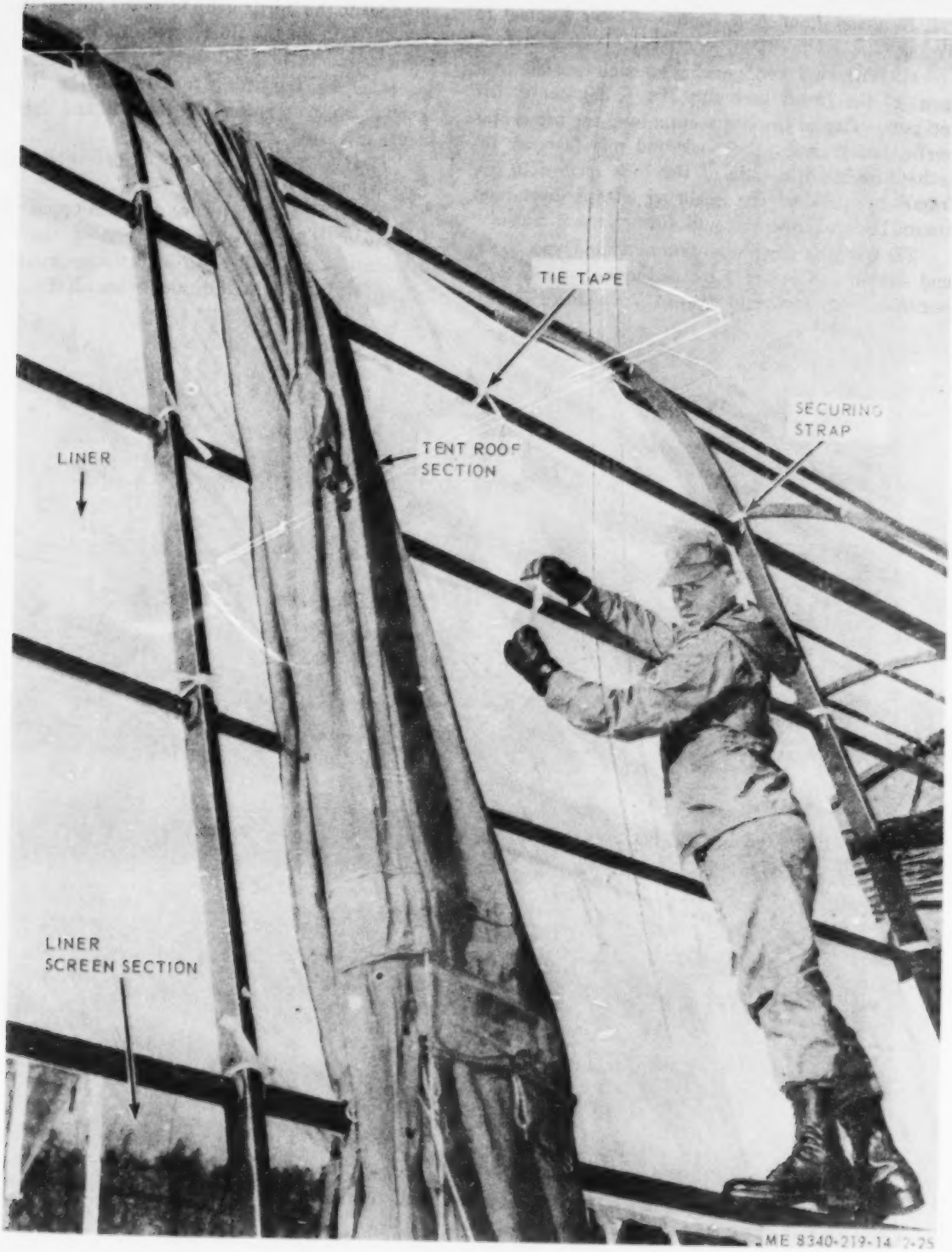



*Figure 2-25. Securing liner end section to frame.*

*l. Securing Roof End Section (Outer Fabric) to Fr[illegible]e.*

(1) With two men working on each topside (four men) of the frame assembly (fig. 2-26), center the top purlin flap of the end section over the top center purlin and pressing the hook and pile fastener together. Secure the ends of the tent section to the frame by passing the securing straps over and around the arch assembly and through the D-rings.

(2) Working down a section at a time, spread the end section and secure it to the purlins and arch assemblies with securing straps. Work down in this manner to the third purlin from the bottom (fig. 2-26).

(3) Roll up the liner screen and secure in place with tie tapes (fig. 2-27).

(4) Pass the front transverse line (fig. 2-27) through the grommet of the end wall and tighten and secure to a lower side purlin.

(5) Tighten and secure the opposite transverse line to a lower side purlin.

(6) At this time, secure only the upper side purlin flap of the end section by placing the S-hooks, attached to the lacing, through the grommet of the upper flap, and tightening and tieing off (fig. 2-27)

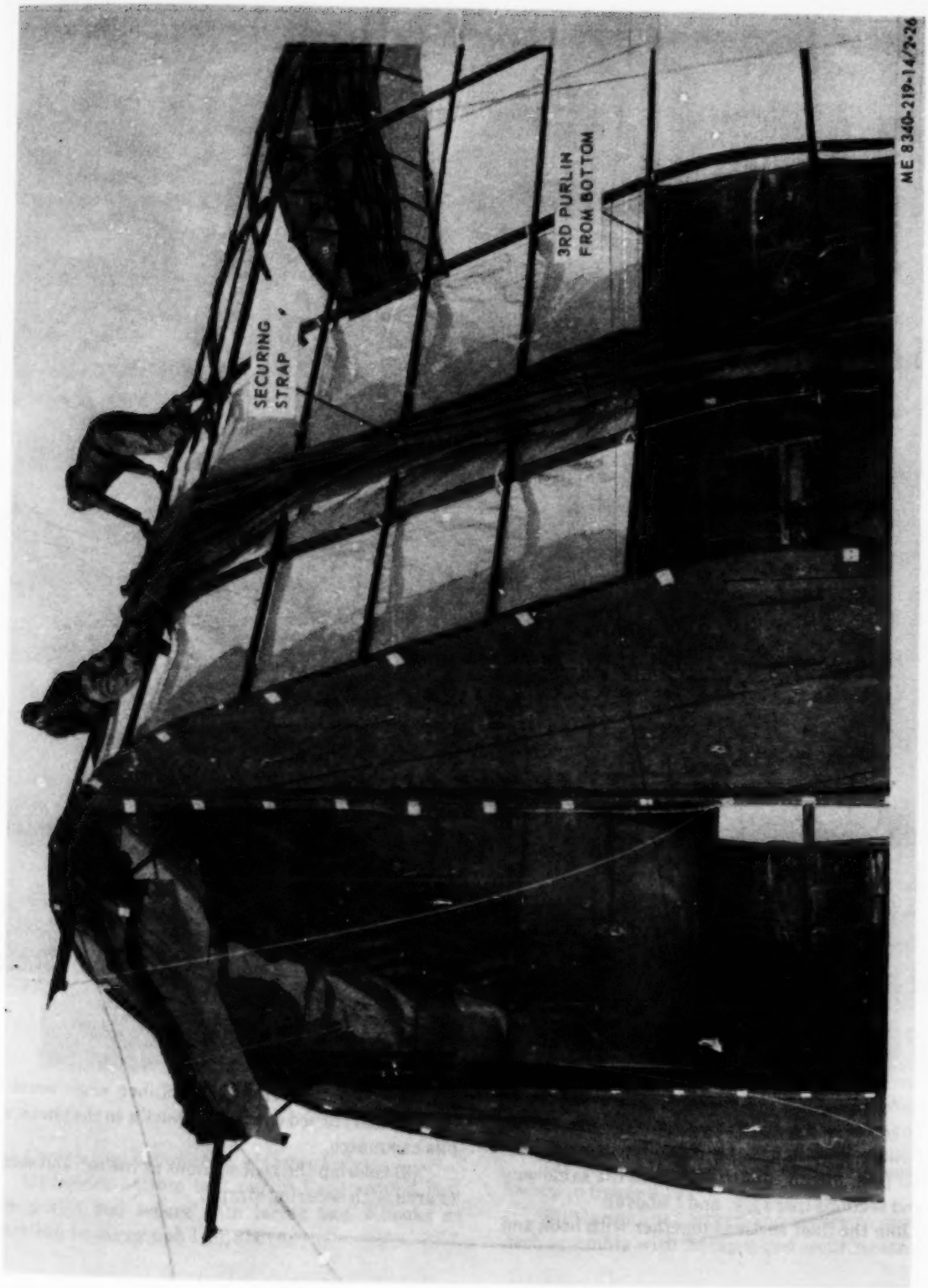



*Figure 2-26. Spreading roof end section (outer fabric).*

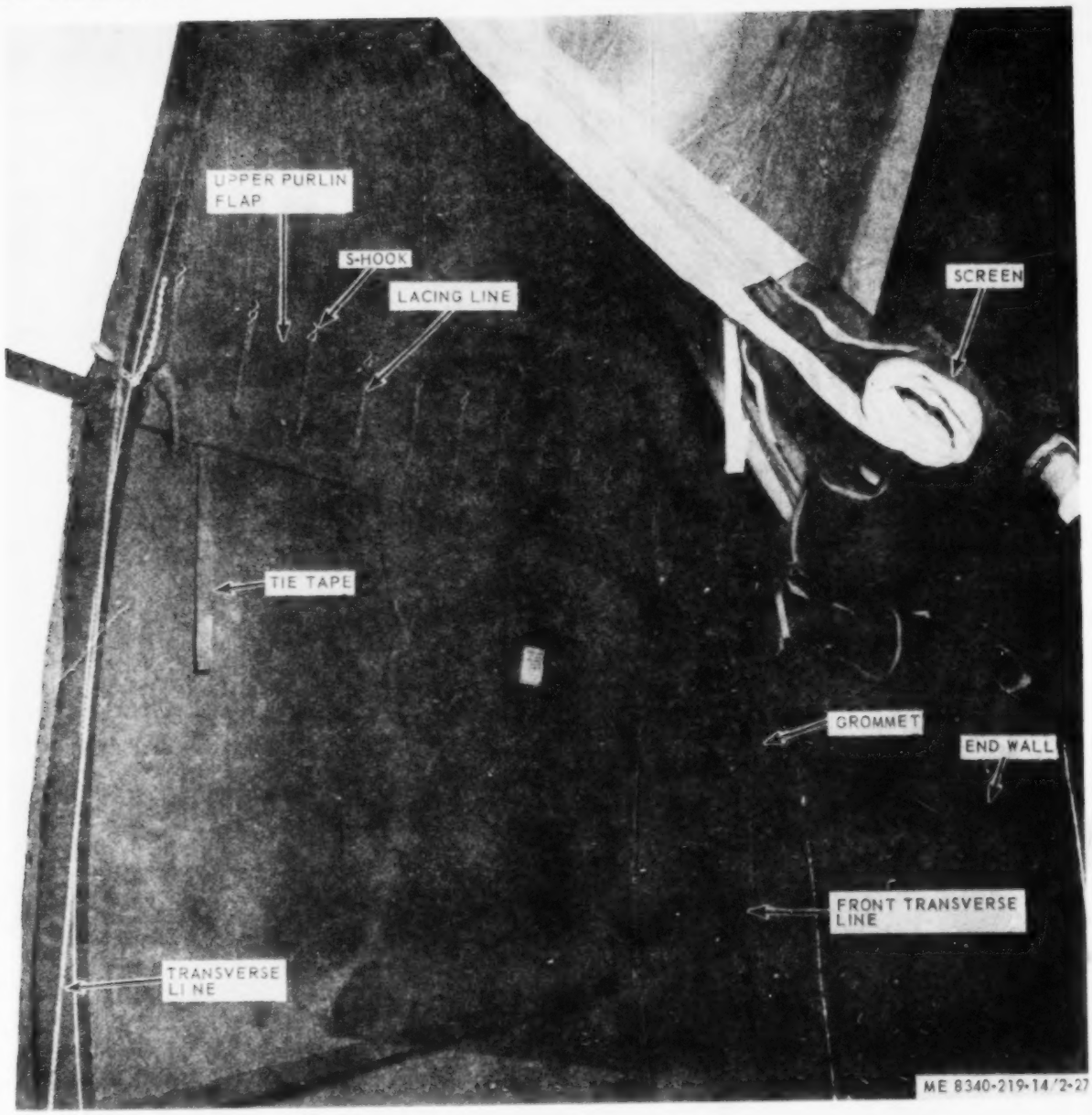



*Figure 2-27. Securing upper purlin flaps.*

*m. Installing Roof Intermediate Sections (Outer Fabric) and Liner Intermediate Sections.*

(1) Raise and secure the roof intermediate sections and liner intermediate sections in the same way as the end sections (para *j*, *k*, and *l*, above).

(2) Join the liner sections together with hook and pile fastener tape (fig. 2-28). Liner edge must be twisted and turned over at top purlin so that hook and pile can match.

(3) Overlap the roof sections at the top and secure to arch with securing straps.

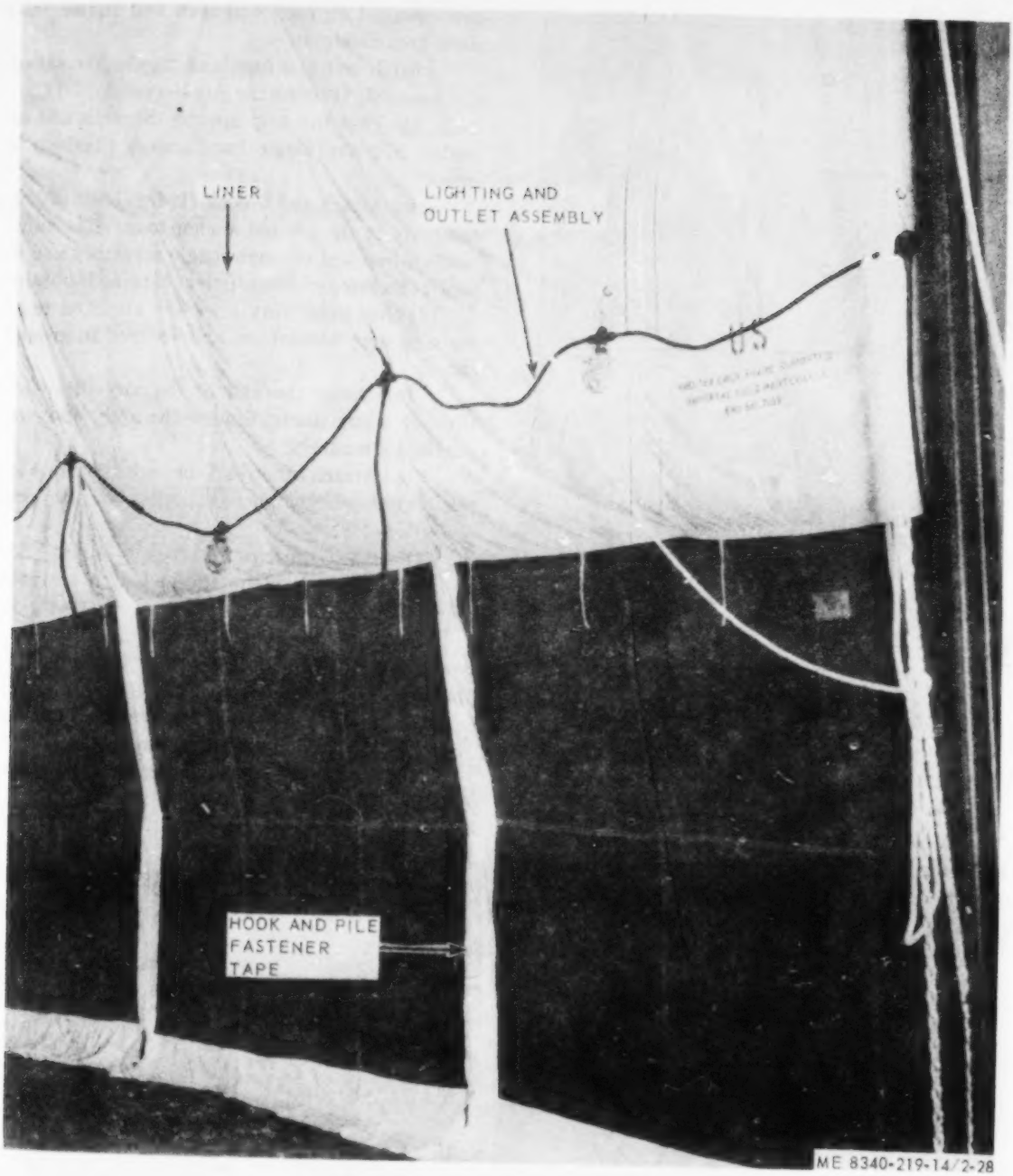



*Figure 2-28. Liner and lighting assembly installed.*

*u. Completing Installation of Outer Fabric.*

(1) Secure bottom tent purlin flaps around bottom purlin and secure with lacing and S-hooks as described in paragraph *t* (6), above.

(2) Becket-lace the tent sections together as shown in figure 2-29.

(3) Unroll liner screen and secure to purlins and arch assembly with tie tapes and securing straps.

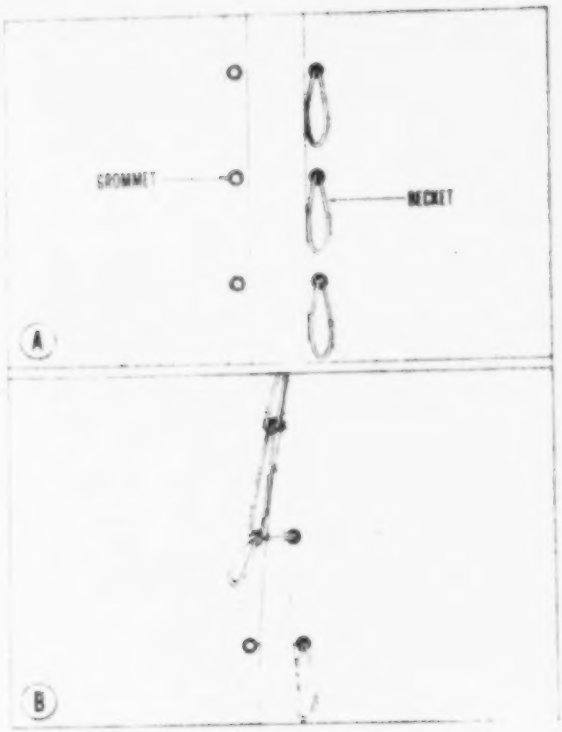



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*Figure 2-29. Becket-lacing sidewalls together.*

*o. Anchoring Tent with Guy Assemblies and Guy Lines.* Refer to figure 2-1 for location of arrowhead-type anchors, guy assemblies, and guy lines.

(1) Guy assemblies. Three guy assemblies (fig. 1-10) are installed on each side of the tent. They are installed on each end arch and center intermediate arch assembly.

*(a)* Insert the loop and toggle bar (3) of the guy assembly through the guy sleeve (fig. 1-1).

*(b)* Pass the loop around the arch and over a purlin. Slip the toggle bar through the loop to secure.

*(c)* Attach the S-hook (1, fig. 1-10) of the guy assembly to the ground anchor loop, slide adjusting beads (5) up and through toggle assembly and clamp toggle (4) closed when sufficient tension is obtained.

(2) *Guy lines.* Guy lines are attached to all remaining arch assemblies and secured to ground anchors.

*(a)* Insert the end of the guy line (fig. 1-1) through a guy sleeve, around the arch, and over the purlin. Tie securely.

*(b)* Attach other end through the cable loop of the arrowhead-type anchor; tighten and tie securely.

*p. Wiring Harness.*

(1) Attach the circuit breaker (1, fig. 1-11) to its mounting bracket on the end arch assembly as shown in figure 2-30.

(2) Install the long cord assembly (2, fig. 1-11) over the door and secure to the arch and purlin with the hanger hooks.

(3) Secure the short cord assembly (3) to the end arch (fig. 2-30) using the hanger hooks.

(4) Connect the socket of the lighting and outlet assembly (fig. 2-30) to either cord assembly.

(5) Install the lighting outlet assembly to the frame (fig. 2-30).

(6) Connect the 6-foot cord assembly (5, fig. 1-11) from the circuit breaker (1) to an outside power source.

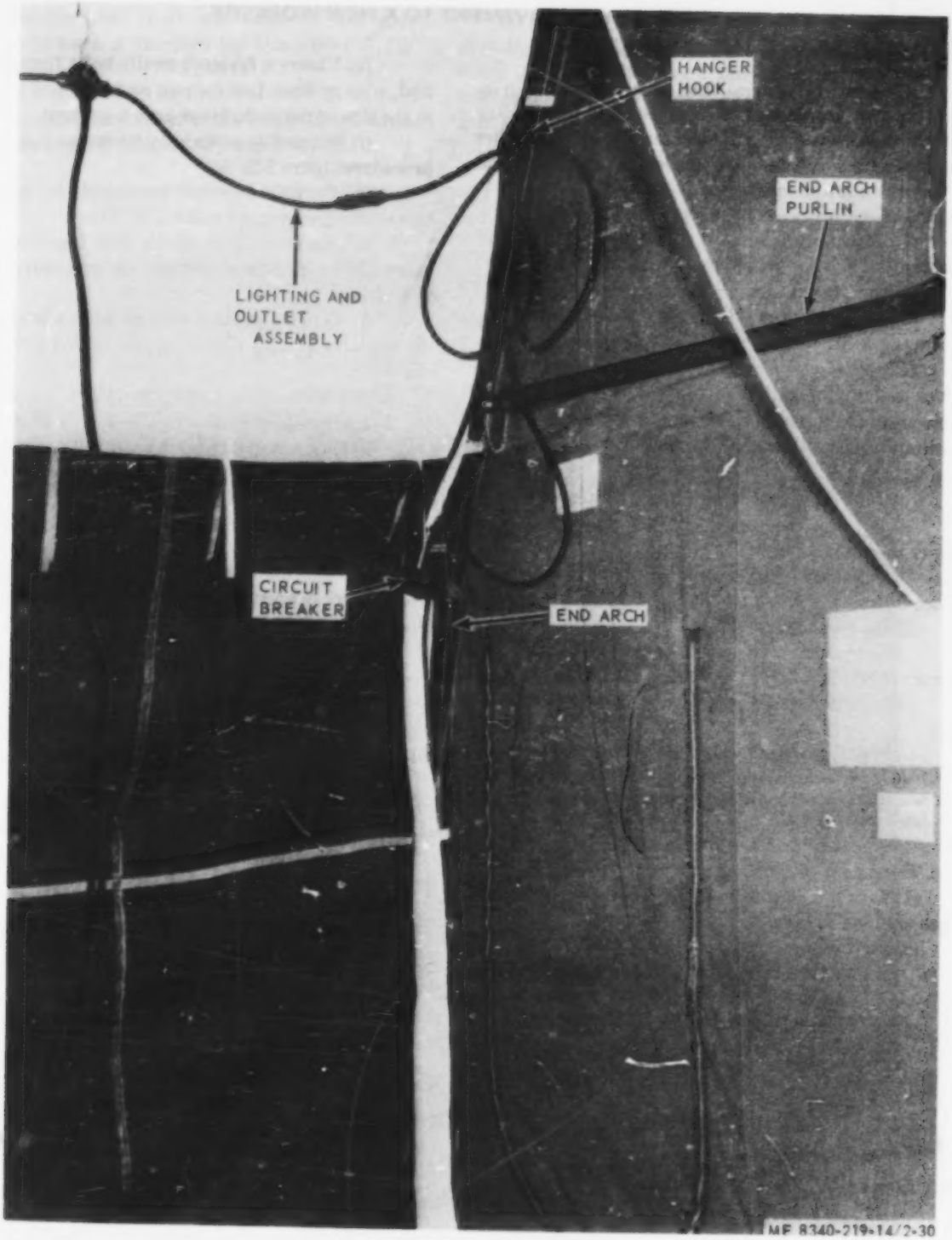



*Figure 2-30. Installing circuit breaker.*

## Section II. MOVEMENT TO A NEW WORKSITE

### 2-3. Dismantling for Movement

*a. General.* In general, the procedures for striking the tent are the reverse of those used for erecting the tent. As when erecting the tent, ladders or other appropriate equipment are needed to perform operations at the top of the frame.

*b. Wiring Harness Assembly.*

(1) Disconnect the cord connected to the power source.

(2) Disconnect the lighting and outlet assemblies.

(3) Remove the circuit breaker and cord assembly from the tent.

*c. Tent Roof (Outer Fabric) and Liner.* Remove guy lines and guy assemblies. The tent roof sections and liner are untied from the frame, a section at a time, simultaneously, up to the top purlin.

(1) *Liner.*

*(a)* Secure a line to liner at top center.

*(b)* Untie the securing tapes and straps and lower to ground.

*(c)* Fold liner section with screen inside and place in cover.

(2) *Tent roof (outer fabric).*

*(a)* Unfasten the roof section from the top center purlin.

*(b)* Pull the roof section over the frame assembly.

NOTE

It will be necessary to station men on the frame assembly to assist in removing roof from frame, and to prevent the fabric from snagging.

*(c)* Fold roof sections and place in cover.

*d. Frame Assembly.*

(1) *Tent pins.* Remove pins from arch anchors as each arch is dismantled.

(2) *First end arch.*

*(a)* Close the vehicle door completely (para 2-6).

*(b)* Close the personnel door with slide fastener.

*(c)* Unfasten end arch purlin flaps.

*(d)* Secure two lines to top of arch assembly.

*(e)* Unscrew fastener purlin bolts from purlins and, with at least two men on each line and two men at the side of the arch, lower arch to ground.

*(f)* Remove door spars by reversing installation procedures (para 2-2*e* (3)).

*(g)* Remove doorpost assemblies by reversing installation procedures (para 2-2*e* (1)).

*(h)* Remove door winch and transom chord assembly by reversing installation procedures (para 2-2*c* (2)).

*(i)* Remove eyebolt at each arch segment and disassemble arch by reversing assembling procedures (para 2-2*c* (1)).

*(j)* Fold end wall section and place in cover.

(3) *Intermediate arch.*

*(a)* Unscrew and remove purlins from arch.

*(b)* Lower arch to ground, remove eyebolt at each arch segment, and disassemble arch.

*(c)* Disassemble all but one intermediate arch in this manner.

(4) *Second end arch.* The second end arc and remaining intermediate arch are lowered to the ground at the same time.

*(a)* Attach three lines to top of end arch as for erection.

*(b)* Place three men at top stabilizing line, three men at each bottom line and two men at each side of end arch, and lower this section to ground.

*(c)* Remove long purlins.

*(d)* Remove intermediate arch and disassemble.

*(e)* Remove short purlins.

*(f)* Disassemble end arch and end wall as described in (2) (*e*) through (*i*), above.

### 2-4. Reinstallation After Movement

Reinstallation procedures are identical to the installation procedures outlined in paragraph 2-2.

## Section III. OPERATION UNDER USUAL CONDITIONS

### 2-5. General

*a.* The instructions in this section are published for the information and guidance of personnel responsible for using the expandable, universal field maintenance, frame-type tent.

*b.* Operating personnel must know how to perform every operation of which the expandable, frame-type tent is capable. This section gives instructions on door and roof ventilator operation.

### 2-6. Vehicle Doors

*a. Opening Doors.*

(1) Unlace lacing ropes from door and door flaps (fig. 1-1).

(2) Pull hoist chain until sod cloth at bottom of door just clears ground, and secure hoist chain. Roll up sod cloth and tie to bottom door spar, using securing straps and D-rings on vehicle door fabric.

(3) Release hoist chain and raise all door spar rollers in channels of doorpost top assemblies (7, fig. 1-7). Lock chain in chain retainer (11).

(4) Pull down chain bolt control rod (10) on each doorpost assembly to unlock chain bolt (8) from strike plate (6) and release doorpost top assembly (7).

(5) Pull door control arm ropes (15) to pivot doorpost top assemblies (7) and raise vehicle door outward (fig. 2-31). Stand outside tent (fig. 2-32) and engage door control arms (2, fig. 1-7) in door control arm locks (9).

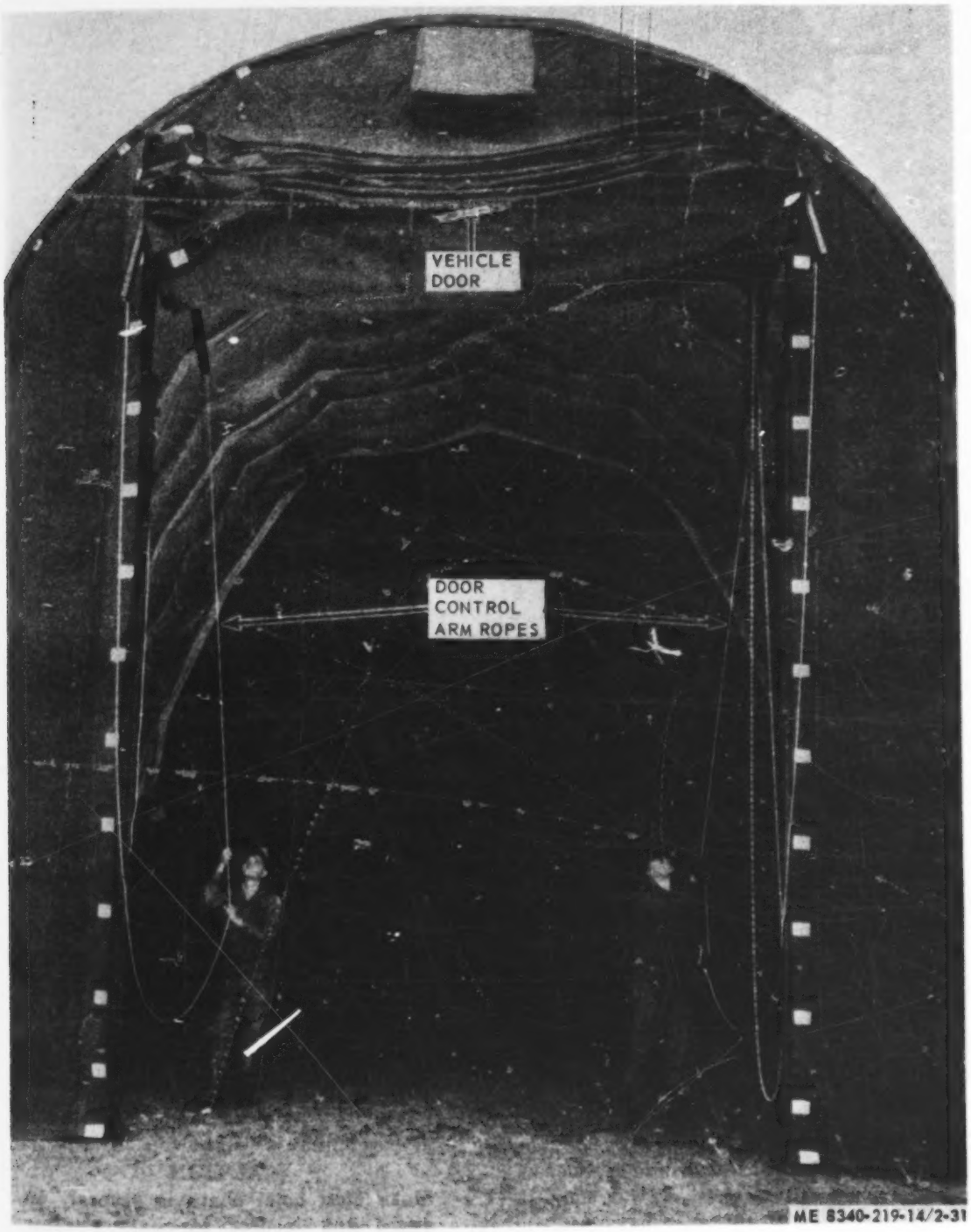



*Figure 2-31. Raising vehicle door outward.*

*Figure 2-32. Vehicle door extended outward.*

*b. Widening Doors.* The vehicle doors can be widened to permit entry and exit of excessively wide equipment.

(1) Raise door outward as described above.

**CAUTION**

**Make sure hoist chain is properly engaged and secured in chain retainer.**

(2) Remove doorpost anchor tent pins.

(3) Unfasten end arch purlin flaps and remove purlins (fig. 2-30).

(4) Doorposts can now be pivoted toward sidewalls (fig. 2-33).

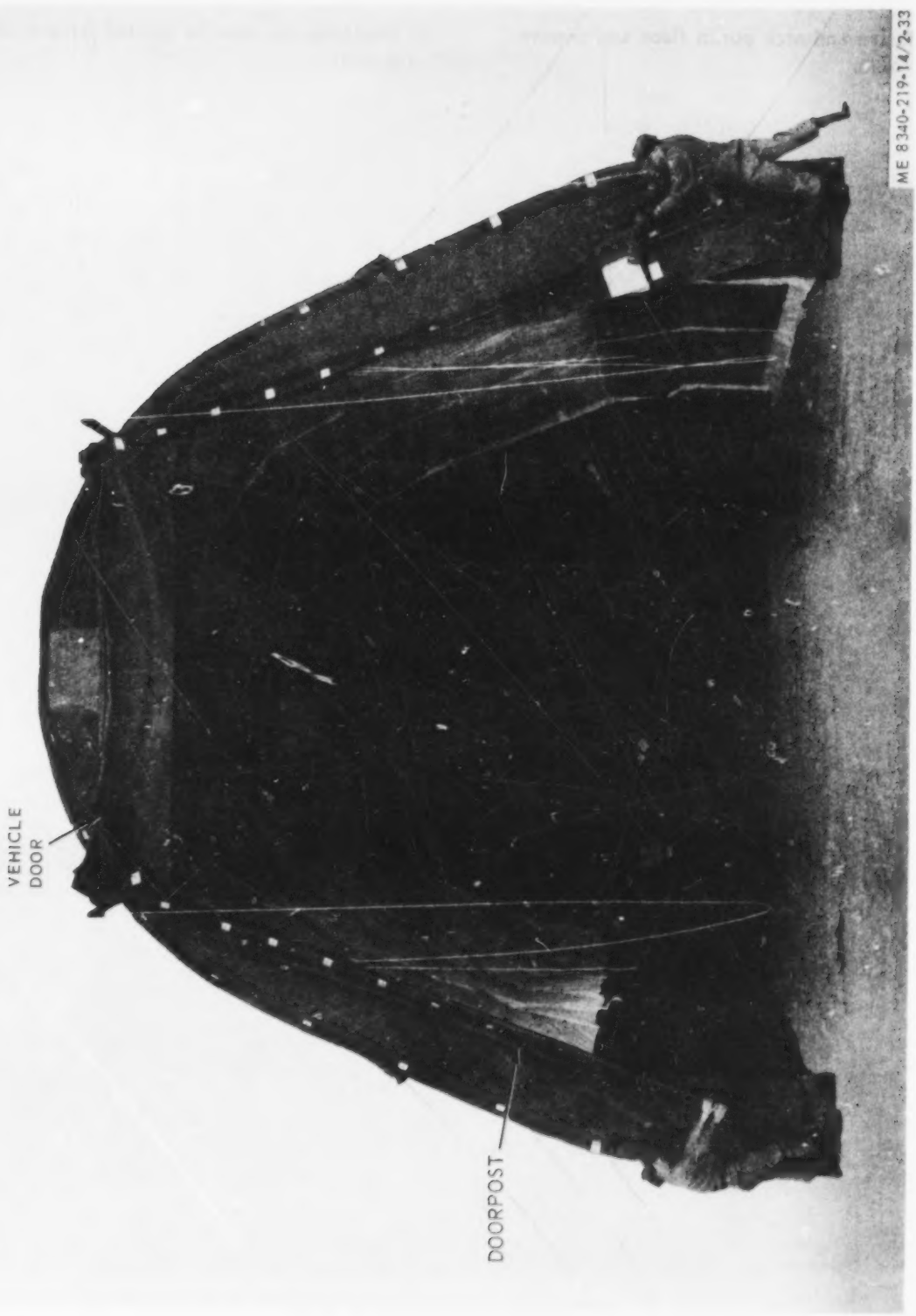



*Figure 2-33. Vehicle door fully opened.*

*c. Closing Doors.*

(1) Pivot doorposts back to normal width and replace end arch purlins and anchor tent pins.

(2) Fasten end arch purlin flaps.

(3) Release door control arm from door control lock. Using the ropes, guide the doorpost top assembly to a closed position. Lock the doorpost top assembly with the chain bolts.

(4) Release the hoist chain from chain retainer and lower door.

(5) Working from outside, hook the lacing lines alternately around the S-hooks on the door flaps and sidewalls, and secure lacing line.

### 2-7. Personnel Door

The personnel door is opened or closed with the slide fasteners. The door is secured open with tie tapes provided. When closed, the door is secured by pressing hook and pile fastener tape together.

### 2-8. Roof Ventilators

The ventilator flaps (fig. 1-1) can be opened or closed, as desired, by activating the ventilator control lines.

### 2-9. Sidewalls

The sidewalls can be rolled up or awninged outward and tied to guy lines (fig. 1-2) as desired.

## Section IV. OPERATION UNDER UNUSUAL CONDITIONS

### 2-10. Operation Under Windy Conditions

Make sure all guy assemblies and guy lines (fig. 1-1) are secured to prevent the tent from damage by the wind.

### 2-11. Operation Under Rainy Conditions

Loosen wet guy lines (fig. 1-1) and guy assemblies to prevent damage to the tent but keep lines taut at all times.

### 2-12. Operation in Snow

Remove snow and ice from the tent before it accumulates and causes damage.

# CHAPTER 3
# OPERATOR/CREW MAINTENANCE INSTRUCTIONS

## Section I. BASIC ISSUE ITEMS

### 3-1. Tools and Equipment

Tools, equipment, and repair parts issued with or authorized for the expandable, frame-type tent, are listed in the basic issue items list, appendix C.

### 3-2. Special Tools and Equipment

The special tools required to perform operator maintenance on the expandable, frame-type tent, are listed in appendix B. No special equipment is required for operator maintenance on the tent.

## Section II. LUBRICATION INSTRUCTIONS

### 3-3. General Lubrication Information

The only item requiring lubrication on the expandable, frame-type tent, are the slide fasteners. The fasteners are located on the personnel doors.

### 3-4. Detailed Lubrication Information

The slide fasteners are lubricated whenever the zipper sticks, locks, or is difficult to operate. Lubricate the fastener with stick-form, zipper-ease lubricant.

## Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

### 3-5. General

To insure that the expandable, frame-type tent is ready for operation at all times, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in paragraph 3-7. Defects discovered will be noted for future correction, to be made as soon as possible. All deficiencies and shortcomings, together with the corrective action taken, will be recorded on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) at the earliest possible opportunity.

### 3-6. Cleaning

Remove dirt and foreign matter from the tent body, liner and covers, support components, and anchoring components, with a soap and water solution, using a soft-bristle brush.

### 3-7. Preventive Maintenance Checks and Services

Table 3-1 contains a tabulated listing of the operator's periodic (daily and weekly) preventive maintenance checks and services. The item numbers indicate the sequence of minimum inspection requirements.

*Table 3-1. Preventive Maintenance Checks and Services*

| Item Number | Interval | | | | | | B—Before operation D—During operation A—After operation W—Weekly M—Monthly Q—Quarterly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Operator | | | | Org | | | | |
| | Daily | | | | M | Q | Item to be inspected | Procedure | Reference |
| | B | D | A | W | | | | | |
| 1 | X | X | X | | | | Tent section (outer fabric) | Inspect for rips, tears, holes, cuts, signs of extreme wear, missing or worn securing straps and chapes, missing grommets, worn or broken lines and other signs of visible damage of any nature. | |
| 2 | X | X | X | | | | Tent liner | Inspect for rips, tears, holes, cuts, signs of extreme wear, missing or worn securing straps and tie tapes and other signs of visible damage of any nature. | |
| 3 | X | X | X | | | | Tent frame | Inspect all components of frame assembly for broken welds, bends, | |

*Table 3-1. Preventive Maintenance Checks and Services* — Continued.

| Item Number | Interval | | | | | | Item to be inspected | Procedure | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | Operator | | | | Org | | | | |
| | Daily | | | | M | Q | | | |
| | B | D | A | W | | | | | |
| | | | | | | | | breaks, cracks, broken or missing hardware, broken purlin studs and other signs of visible damage of any nature. | |
| 4 | X | X | X | | | | Vehicle door | Inspect doorpost assemblies for breaks, bends, cracks, broken or missing hardware, broken or worn lines, broken or worn door spars and nylon rollers and other signs of visible damage of any nature. | |
| 5 | X | X | X | | | | Winch assembly | Inspect for worn or broken cables and chains and other signs of visible damage of any nature. | |
| 6 | X | X | X | | | | Anchoring components | Inspect steel pins for bends, breaks, or cracks. Inspect anchors for looseness, worn or broken cables. Inspect guy assemblies and guy lines for wear or breaks. Tighten all guy lines that may become loose. | |
| 7 | X | X | X | | | | Electrical ay | Inspect circuit breaker for wear or damage. Inspect for worn, broken or frayed cables and wiring. Inspect for worn or broken outlets and other signs of visible damage of any nature. | |

B - Before operation D - During operation A - After operation W - Weekly M - Monthly Q - Quarterly

# CHAPTER 4
# ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

## Section I. SERVICE UPON RECEIPT OF EQUIPMENT

### 4-1. Inspecting and Servicing the Equipment

Refer to paragraph 2-1 for inspection and servicing procedures.

### 4-2. Installation

Refer to paragraph 2-2 for installation procedures.

## Section II. MOVEMENT TO A NEW WORKSITE

### 4-3. Dismantling for Movement

Refer to paragraph 2-3 for dismantling procedures.

### 4-4. Reinstallation After Movement

Refer to paragraph 2-4 for reinstallation procedures.

## Section III. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

### 4-5. Tools and Equipment

Tools, equipment, and repair parts issued with or authorized for the expandable, frame-type tent, are listed in the basic issue items list, appendix C.

### 4-6. Special Tools and Equipment

No special tools or equipment are required by organizational personnel to perform maintenance on the expandable, frame-type tent.

### 4-7. Maintenance Repair Parts

Repair parts and equipment are listed and illustrated in TM 10-8340-219-24P (when published).

## Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (MONTHLY AND QUARTERLY)

### 4-8. General

To insure that the expandable, frame-type tent is ready for operation at all times, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in paragraph 4-9.

### 4-9. Preventive Maintenance Checks and Services

Table 4-1 contains a tabulated listing of preventive maintenance services to be performed by organizational maintenance personnel at monthly and quarterly intervals. A quarterly interval is equal to three calendar months, or 250 hours of operation, whichever occurs first. The item numbers indicate the sequence of minimum inspection requirements.

*Table 4-1. Preventive Maintenance Checks and Services*

B-Before operation D-During operation A-After operation W-Weekly M-Monthly Q-Quarterly

| Item Number | Interval | | | | | | Item to be inspected | Procedure | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | Operator | | | | Org | | | | |
| | Daily | | | | M | Q | | | |
| | B | D | A | W | | | | | |
| 1 | X | X | X | | | | Tent section (outer fabric) | Repair rips, tears, and holes, by hand sewing and cement patching. | Para 4-11 |
| 2 | X | X | X | | | | Tent liner | Repair rips, tears, and holes, by hand sewing and cement patching. | Para 4-13 |
| 3 | X | X | X | | | | Tent frame | Inspect all components of frame assembly for broken welds, bends, breaks, cracks, broken or missing hardware, broken purlin studs and other signs of visible damage of any nature. | |
| 4 | X | X | X | | | | Vehicle door | Inspect doorpost assemblies for breaks, bends, cracks, broken or missing hardware, broken or worn lines, | |

*Table 4-1. Preventive Maintenance Checks and Services — Continued.*

B- Before operation A- After operation M- Monthly
D- During operation W- Weekly Q- Quarterly

| Item Number | Interval | | | | | | Item to be inspected | Procedure | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | Operator | | | | Org | | | | |
| | Daily | | | | M | Q | | | |
| | B | D | A | W | | | | | |
| | | | | | | | | broken or worn door spars and nylon rollers and other signs of visible damage of any nature. | |
| 5 | X | X | X | | | | Winch assembly | Inspect for worn or broken cables and chains and other signs of visible damage of any nature. | |
| 6 | X | X | X | | | | Anchoring components | Replace unserviceable guy lines with serviceable lines. | Para 4-21 |
| 7 | X | X | X | | | | Electrical ay | Inspect circuit breaker for wear or damage. Inspect for worn, broken or frayed cables and wiring. Inspect for worn or broken outlets and other signs of visible damage of any nature. | |

## Section V. MAINTENANCE OF TENT BODY, COVERS, AND LINER

### 4-10. General

The tent body and covers are made of cotton duck cloth and can be repaired by hand sewing and cement patching. The liner is made of oxford cloth and can be repaired by hand sewing.

### 4-11. Tent Body

*a. Repair.* For repair instructions on the tent body (outer fabric), refer to TM 10-269.

*b. Replacement.* Replace an unserviceable tent body with a serviceable like item.

### 4-12. Covers

*a. Repair.* For repair instructions on the covers, refer to TM 10-269.

*b. Replacement.* Replace an unserviceable cover with a serviceable like item.

### 4-13. Liner

*a. Repair.* For repair instructions on the liner, refer to TM 10-269.

*b. Replacement.* Replace an unserviceable liner with a serviceable like item.

## Section VI. MAINTENANCE OF TENT SUPPORT COMPONENTS (FRAME)

### 4-14. General

Some maintenance operations will require partial disassembly of the tent while others may be accomplished without disassembly. For any inspection of the tent frame itself, the wiring harness and tent liner must be removed.

### 4-15. Segment Assemblies

*a. Removal.* To remove the upper, lower, or intermediate segment assemblies, refer to paragraph 2-3.

*b. Replacement.* Replace an unserviceable segment with a serviceable like item.

*c. Installation.* To install the upper, lower, or intermediate segment assemblies, refer to paragraph 2-2.

### 4-16. Bracket Assembly

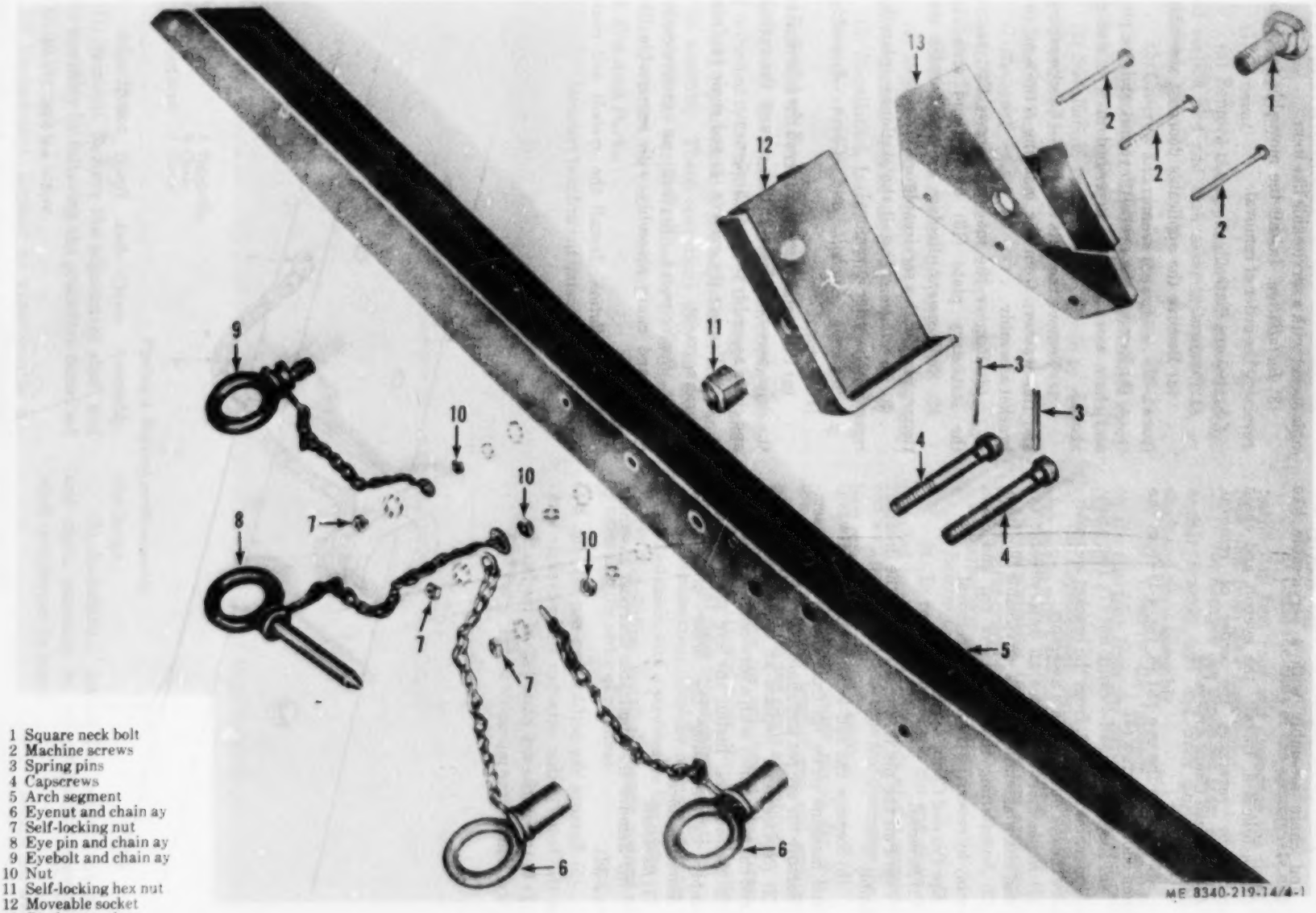
*a. General.* Repair of the bracket assembly is limited to the following: Replacement of the eyebolt and chain assemblies, eye nut and chain assemblies, eye pin and chain assemblies, stationary plate, and moveable socket; chasing of threaded parts having minor thread damage.

*b. Eyebolt and Chain Assembly.*

(1) *Removal.*

(*a*) Remove the eyebolt (9, fig. 4-1) from the doorpost assembly.

(*b*) Remove the self-locking nut (7), flat washer, and machine screw (2) from the bracket assembly. Remove the eyebolt and chain assembly.




1 Square neck bolt
2 Machine screws
3 Spring pins
4 Capscrews
5 Arch segment
6 Eyenut and chain ay
7 Self-locking nut
8 Eye pin and chain ay
9 Eyebolt and chain ay
10 Nut
11 Self-locking hex nut
12 Moveable socket
13 Stationary plate

*Figure 4-1. End arch bracket assembly.*

(2) *Replacement.* Replace an unserviceable eyebolt and chain assembly with a serviceable like item.

(3) *Installation.* Install the eyebolt and chain assembly by reversing the order of removal.

*c. Eye Nut and Chain Assembly.*

(1) *Removal.*

(*a*) Remove the eye nut (6, fig. 4-1) from the transom chord capscrew (4).

(*b*) Remove the self-locking nut (7), flat washer, and machine screw (2) from the bracket assembly. Remove the eye nut and chain assembly.

(2) *Replacement.* Replace an unserviceable eye nut and chain assembly with a serviceable like item.

(3) *Installation.* Install the eye nut and chain assembly by reversing the order of removal.

*d. Eye Pin and Chain Assembly.*

(1) *Removal.*

(*a*) Pull the pin (8, fig. 4-1) from the doorpost assembly.

(*b*) Remove the self-locking nut (7), flatwasher, and machine screw (2) from the bracket assembly. Remove the eye pin and chain assembly.

(2) *Replacement.* Replace an unserviceable eye pin and chain assembly with a serviceable like item.

(3) *Installation.* Install the eye pin and chain assembly by reversing the order of removal.

*e. Moveable Socket.*

(1) *Removal.*

(*a*) Remove the applicable doorpost assembly (para 2-3*d*).

(*b*) Remove the self-locking nut (11, fig. 4-1) from the bolt (1) that attaches the moveable socket (12) to the stationary plate (13) of the bracket assembly. Remove the moveable socket.

(2) *Replacement.* Replace an unserviceable moveable socket with a serviceable like item.

(3) *Installation.* Install the moveable socket by reversing the order of removal.

*f. Stationary Plate.*

(1) *Removal.*

(*a*) Remove the applicable doorpost assembly (para 2-3*d*).

(*b*) Remove the eyebolt, eye nut and eye pin, and chain assemblies, as described in *b*, *c*, and *d*, above.

(*c*) Remove the nuts (10, fig. 4-1), lockwashers, and flat washers from the machine screws on the bracket assembly.

(*d*) Remove the machine screws that secure the stationary plate (13) to the end arch (5).

(2) *Replacement.* Replace an unservicable stationary plate with a serviceable one.

(3) *Installation.* Install the stationary plate by reversing the order of removal.

*g. Segment Eyebolt and Chain Assembly.*

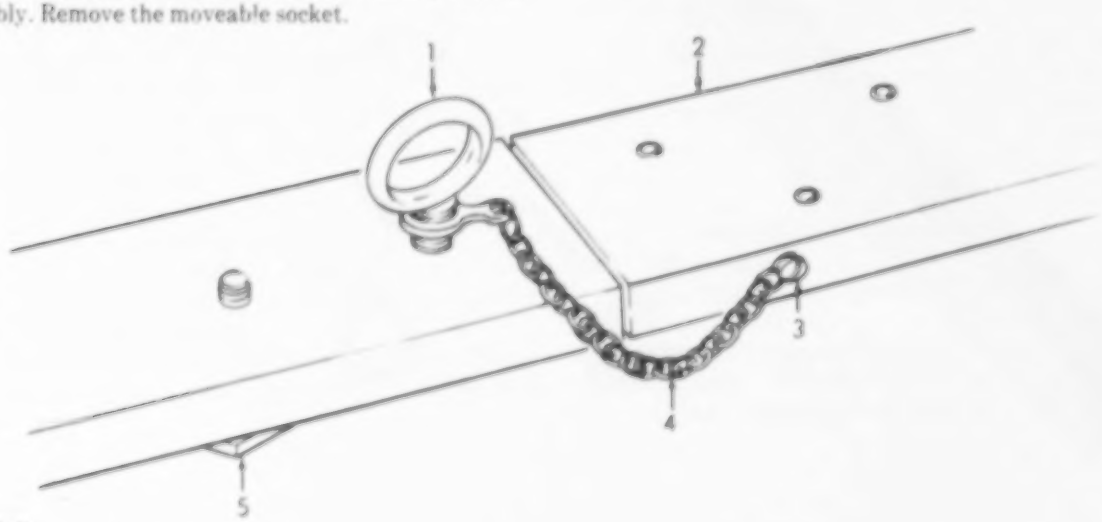
(1) *Removal.*

(*a*) Use a claw hammer or crowbar and remove the drive screw (3, fig. 4-2) that secures the eyebolt and chain assembly to the arch segment.

(*b*) Remove the eyebolt (1) and chain (4) from the arch segment.

(2) *Replacement.* Replace an unserviceable eyebolt and chain assembly with serviceable like item.

(3) *Installation.* Install the eyebolt and chain assembly by reversing the order of removal.




1 Eyebolt
2 Intermediate arch segment
3 Drive screw
4 Chain
5 Lower arch segment

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*Figure 4-2. Eyebolt and chain assembly*

## 4-17. Purlin Assemblies

*a. Short Purlins.*

(1) *Removal.*

(*a*) Remove the applicable end guy assembly, end section and end arch assembly (para 2-3*b*, *c*, and *d*).

(*b*) Unscrew and remove the purlin.

(2) *Replacement.* Replace an unserviceable short purlin with a serviceable like item.

(3) *Installation.* Install a short purlin by reversing the order of removal.

*b. Long Purlins.*

(1) *Removal.*

(*a*) Disassemble the tent from the intermediate arch.

(*b*) Unscrew and remove the purlin.

(2) *Replacement.* Replace an unservicable long purlin with a serviceable like item.

(3) *Installation.* Install a long purlin by reversing the order of removal.

## 4-18. End Arch Purlin Assembly

*a. General.* The repair of an end arch purlin assembly is limited to the replacement of the toggle pin and chain and replacement of the adjustment shaft and clevis assembly. These operations may be accomplished with the purlin installed on the erected tent or after the purlin has been removed.

*b. End Arch Purlin.*

(1) *Removal.*

(*a*) Untie the ends of the appropriate end wall purlin flap hem rope and disengage the three hem rope rings from the J-hooks.

(*b*) Remove the toggle pin from each end arch anchor bracket and end arch purlin adjustment shaft and clevis assembly.

(*c*) Unscrew the fastener purlin end fitting on the doorpost from the purlin insert and remove the purlin.

(2) *Replacement.* Replace an unservicable end arch purlin with a serviceable like item

(3) *Installation.* Install the end arch purlin by reversing the order of removal.

*c. Toggle Pin and Chain.*

(1) *Removal.*

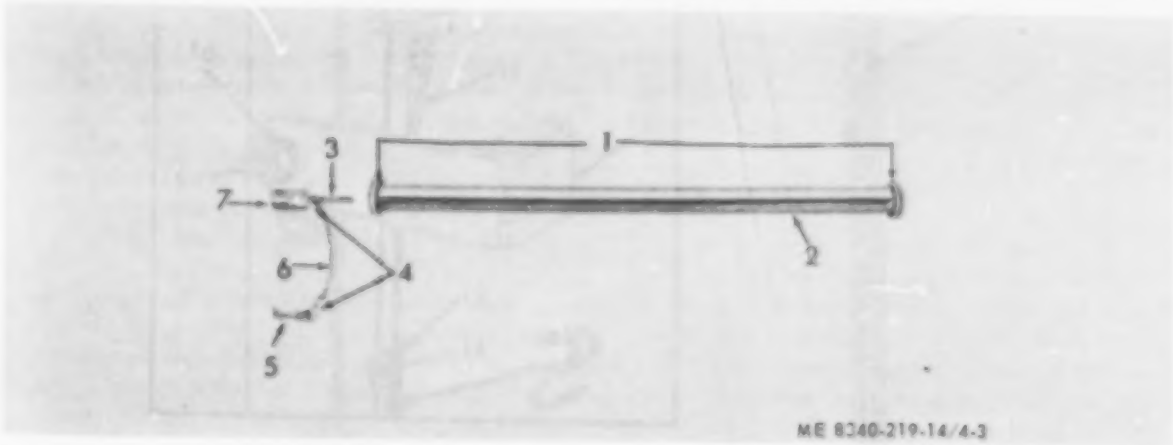
(*a*) To remove the toggle pin and chain on an installed purlin, untie the ends of the appropriate end wall purlin flap hem rope and disengage the three hem rope rings from the J-hooks.

(*b*) Remove the toggle pin (5, fig. 4-3) from the end arch anchor bracket and end arch purlin adjustment shaft (3) and clevis assembly (7).

(*c*) Unscrew the adjustment shaft from the purlin insert (1) and slide the link (4), attached to the chain (6), from the adjustment shaft.

(2) *Replacement.* Replace an unserviceable toggle pin and chain with a serviceable like item.

(3) *Installation.* Install the toggle pin and chain by reversing the order of removal.




1 Flanges
2 Purlin
3 Adjustment shaft
4 Links
5 Toggle pin
6 Chain
7 Clevis

*Figure 4-3. End arch purlin assembly.*

*d. Adjustment Shaft and Clevis Assembly.*

(1) *Removal.* Remove the adjustment shaft and clevis assembly by following the procedure described in *c* (1) (*a*) through (*c*), above.

(2) *Replacement.* Replace an unserviceable adjustment shaft and clevis assembly with serviceable like items.

(3) *Installation.* Install the adjustment shaft and clevis assembly by threading the adjustment shaft into the purlin insert.

## 4-19. Doorpost Assembly

*a. General.* The repair of the doorpost assembly is limited to the replacement of the door control arm, diagonal door control arm, toggle pin assemblies, door control arm lock, chain bolt control rod, rod retainer, doorpost top assembly, and doorpost.

*b. Door Control Arm.*

(1) *Removal.*

(*a*) Close the vehicle door (para 2-6).

(*b*) Untie and remove the door control arm line (7, fig. 4-4) from the door control arm (1).

(*c*) Remove the toggle pin (8) that secures the diagonal door control arm (9) to the door control arm.

(*d*) Pull the door control arm from the doorpost gusset (2).

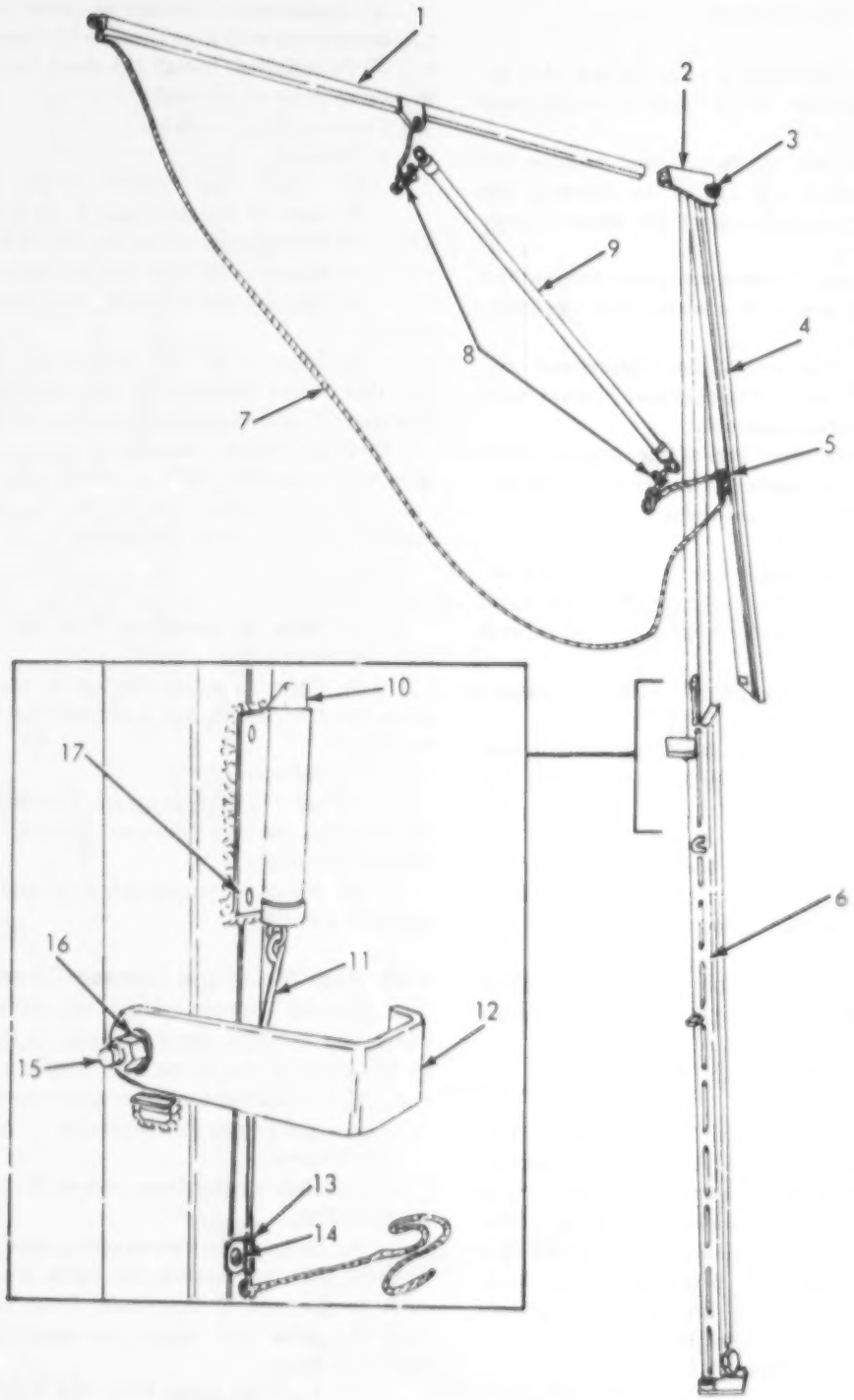
(2) *Replacement.* Replace an unserviceable door control arm with a serviceable like item.

(3) *Installation.*

(*a*) Instali the door control arm by tieing the door control arm line to the plug in the replacement door control arm.

(*b*) Insert the door control arm into the doorpost gusset.

(*c*) Attach the diagonal door control arm to the door control arm with the toggle pin and chain assembly.




ME 8340-219-14/4-4

1 Door control arm
2 Gusset
3 Self-locking nut and washer
4 Doorpost top assembly
5 Doorpost top assembly bracket
6 Doorpost
7 Door control arm line
8 Toggle pin assemblies
9 Diagonal door control arm
10 Chain bolt
11 Chain bolt control rod
12 Door control arm lock
13 Rod retainer
14 Machine screws
15 Capscrews
16 Nut
17 Rivets

*Figure 4-4. Doorpost assembly.*

*c. Diagonal Door Control Arm.*

(1) *Removal.*

*(a)* Remove the toggle pin (8, fig. 4-4) that secures the diagonal door control arm (9) to the door control arm (1).

*(b)* Remove the toggle pin that secures the diagonal door control arm (9) to the doorpost top assembly bracket (5) and remove the diagonal door control arm.

(2) *Replacement.* Replace an unserviceable diagonal door control arm with a serviceable like item.

(3) *Installation.*

*(a)* Secure either end of the replacement diagonal door control arm to the doorpost bracket with the toggle pin and chain assembly.

*(b)* Secure the other end of the diagonal door control arm with the toggle pin and chain assembly.

*d. Toggle Pin and Chain Assembly.*

(1) *Removal.*

*(a)* Remove the toggle pin (8, fig. 4-4) that secures the diagonal door control arm (9) to the doorpost top assembly bracket (5) or door control arm (1).

*(b)* Cut the link attaching the assembly. Remove the toggle pin, chain, and link.

(2) *Replacement.* Replace an unserviceable toggle pin and chain assembly with a serviceable like item.

(3) *Installation.*

*(a)* Insert the S-hook in the link of the replacement assembly and in the door control arm or doorpost top assembly bracket. Close the S-hooks.

*(b)* Insert the toggle pin in the appropriate bracket and diagonal door control arm connector and lock the toggle.

*e. Door Control Arm Lock.*

(1) *Removal.*

*(a)* Raise the vehicle door (para 2-6).

*(b)* Remove the nut (16, fig. 4-4) and capscrew (15) that secure the door control arm lock (12) to the doorpost (6). Remove the door control arm lock.

(2) *Replacement.* Replace an unserviceable door control arm lock with a serviceable like item.

(3) *Installation.* Install the door control arm lock in reverse order of removal.

*f. Chain Bolt Control Rod.*

(1) *Removal.*

*(a)* Remove the screws (14, fig. 4-4) that secure the rod retainer (13) to the doorpost (6) and remove the rod retainer.

*(b)* Open the loop of the rod (11) that is connected to the chain bolt (10) and remove the rod from the chain bolt.

(2) *Replacement.* Replace an unserviceable chain bolt control rod with a serviceable like item.

(3) *Installation.* Install the chain bolt control rod in reverse order of removal.

*g. Doorpost Top Assembly.*

(1) *Removal.*

*(a)* Close the vehicle door (para 2-6).

*(b)* Remove top door spar from door spar flap and allow door spar to rest on next lower spar.

*(c)* Remove the door control arm (*b*, above).

*(d)* Remove the diagonal door control arm (*c*, above).

*(e)* Remove the nut, washer (3, fig. 4-4) and bolt that secure the doorpost top assembly (4) to the doorpost (6), and remove the doorpost top assembly.

(2) *Replacement.* Replace an unserviceable doorpost top assembly with a serviceable like item.

(3) *Installation.* Install the doorpost top assembly in reverse order of removal.

*h. Doorpost.*

(1) *Removal.*

*(a)* Refer to paragraph 2-3*d* and remove the doorpost assembly.

*(b)* Refer to sub-paragraph *h*, above, and remove the doorpost (6, fig. 4-4) from the doorpost assembly.

(3) *Installation.*

*(a)* Refer to sub-paragraph *h*, above, and install the doorpost on the doorpost assembly in reverse order of removal.

*(b)* Refer to paragraph 2-2*e* and install the doorpost assembly.

## 4-20. Door Winch and Transom Chord Assembly

*a. General.* Organizational maintenance of the winch and transom chord assembly is limited to the replacement of the cable and toggle pin assembly and the replacement of the transom chord strut.

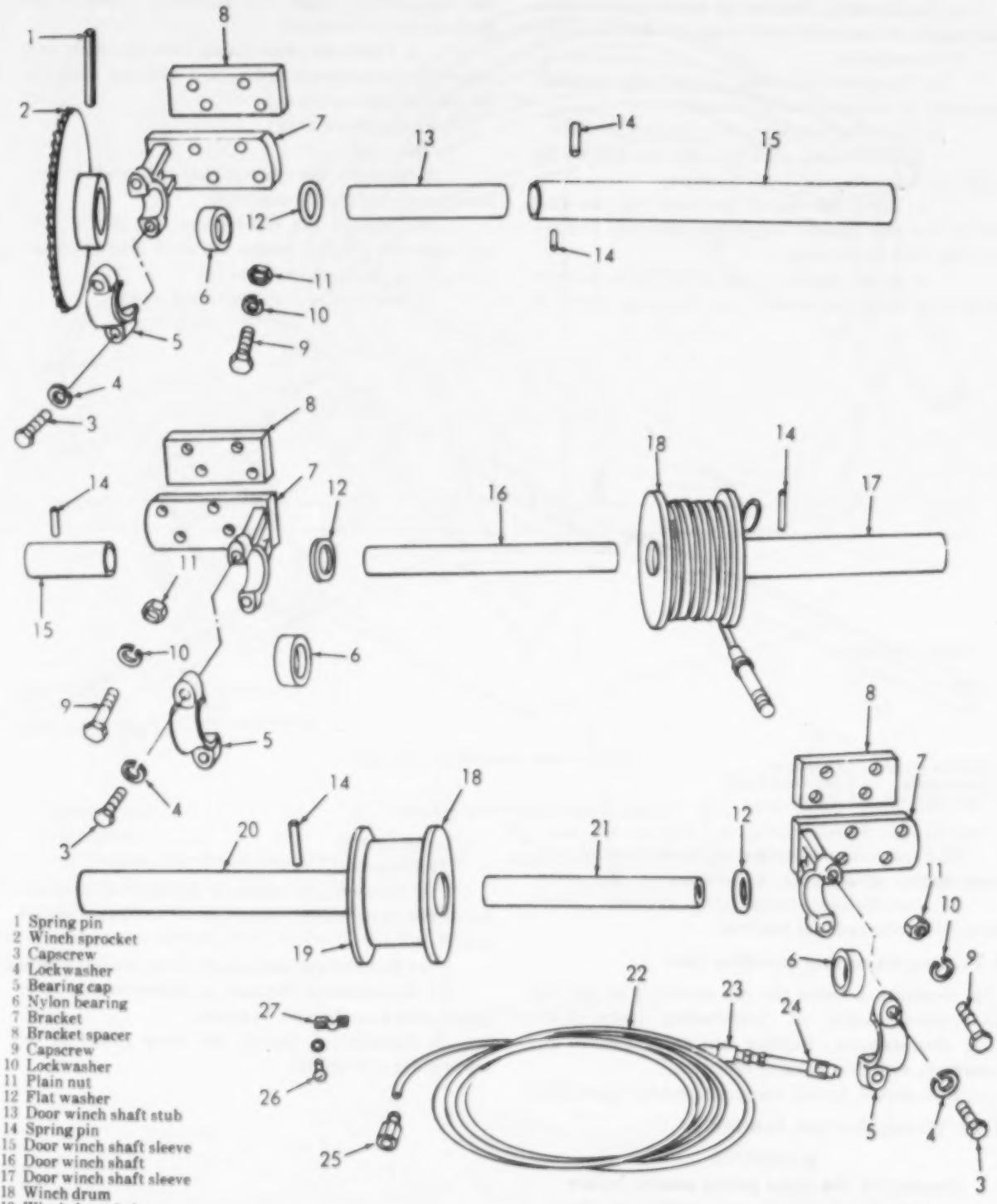
*b. Cable and Toggle Pin Assembly.*

(1) *Removal.*

*(a)* Remove the drum socket (25, fig. 4-5) from the cable (22).

*(b)* Remove the two machine screws and lockwashers (26) that secure the cable clamp (27) and cable to the side of the winch drum (18), and unwind the cable and toggle pin assembly (24) from the winch drum.

*(c)* Pull the cable from the hole (19) in the winch drum.




1 Spring pin
2 Winch sprocket
3 Capscrew
4 Lockwasher
5 Bearing cap
6 Nylon bearing
7 Bracket
8 Bracket spacer
9 Capscrew
10 Lockwasher
11 Plain nut
12 Flat washer
13 Door winch shaft stub
14 Spring pin
15 Door winch shaft sleeve
16 Door winch shaft
17 Door winch shaft sleeve
18 Winch drum
19 Winch drum hole
20 Door winch shaft sleeve
21 Door winch shaft
22 Cable
23 Stud end of toggle pin
24 Toggle pin assembly
25 Drum socket
26 Machine screws and lockwashers
27 Cable clamp

*Figure 4-5. Door winch shaft assembly.*

(2) *Replacement.* Replace an unserviceable cable and toggle pin assembly with a serviceable like item.

(3) *Installation.*

*(a) Complete assembly.* Install the complete assembly in reverse order of removal.

*(b) Installing toggle pin on a serviceable cable.*

*1.* Remove the stud end (23, fig. 4-5) of the toggle pin assembly (24) from the cable.

*2.* Insert one end of the cable into the stud end of the replacement toggle pin assembly and secure the stud to the cable.

*3.* Insert the other end of the cable into the hole in the winch drum and into the drum socket of the replacement toggle pin assembly. Secure the drum socket to the cable.

*4.* Place the cable clamp over the cable just below the drum socket and secure with the machine screws and lockwashers.

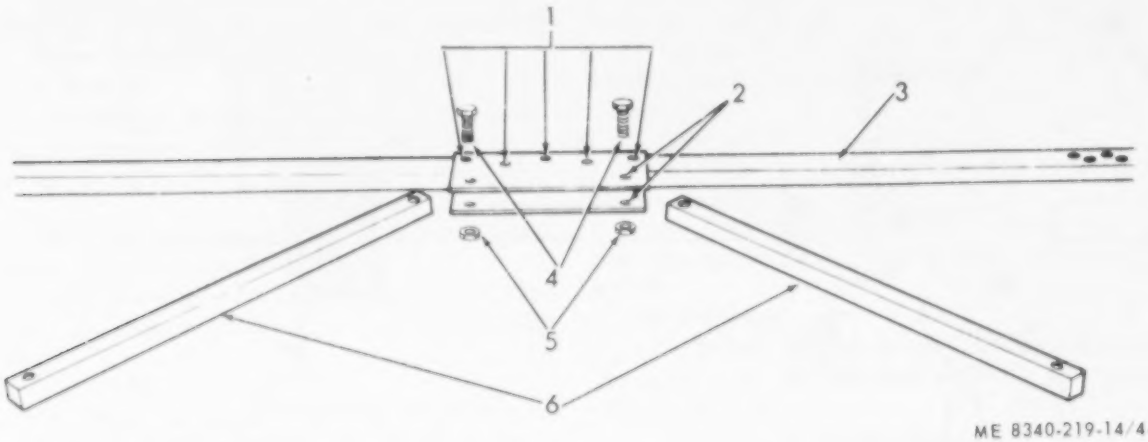
*c. Transom Chord Strut.*

(1) *Removal.*

*(a)* Remove the eye nut that secures the transom chord struts to the end arch.

*(b)* Remove the self-locking nut (5, fig. 4-6) and capscrew (4) that secure the strut (6) and gusset plates (2) to the transom chord (3).

*(c)* Remove the transom chord strut.




1 Machine screws
2 Gusset plates
3 Transom chord
4 Capscrews
5 Self-locking nuts
6 Struts

*Figure 4-6. Transom chord and struts.*

(2) *Replacement.* Replace an unserviceable transom chord strut with a serviceable like item.

(3) *Installation.* Install the transom chord strut in reverse order of removal.

## 4-21. Guy Assembly and Guy Line

*a. Removal.* Remove the guy assembly or guy line in reverse order of installation (para 2-2*o*).

*b. Replacement.* Replace an unserviceable guy assembly with a serviceable like item.

*c. Installation.* Install the guy assembly (para 2-2*o*).

## 4-22. Wiring Harness Assembly

**WARNING**

**Disconnect the main power source before servicing, repairing, or replacing the electrical equipment.**

*a. Lamp Guard.*

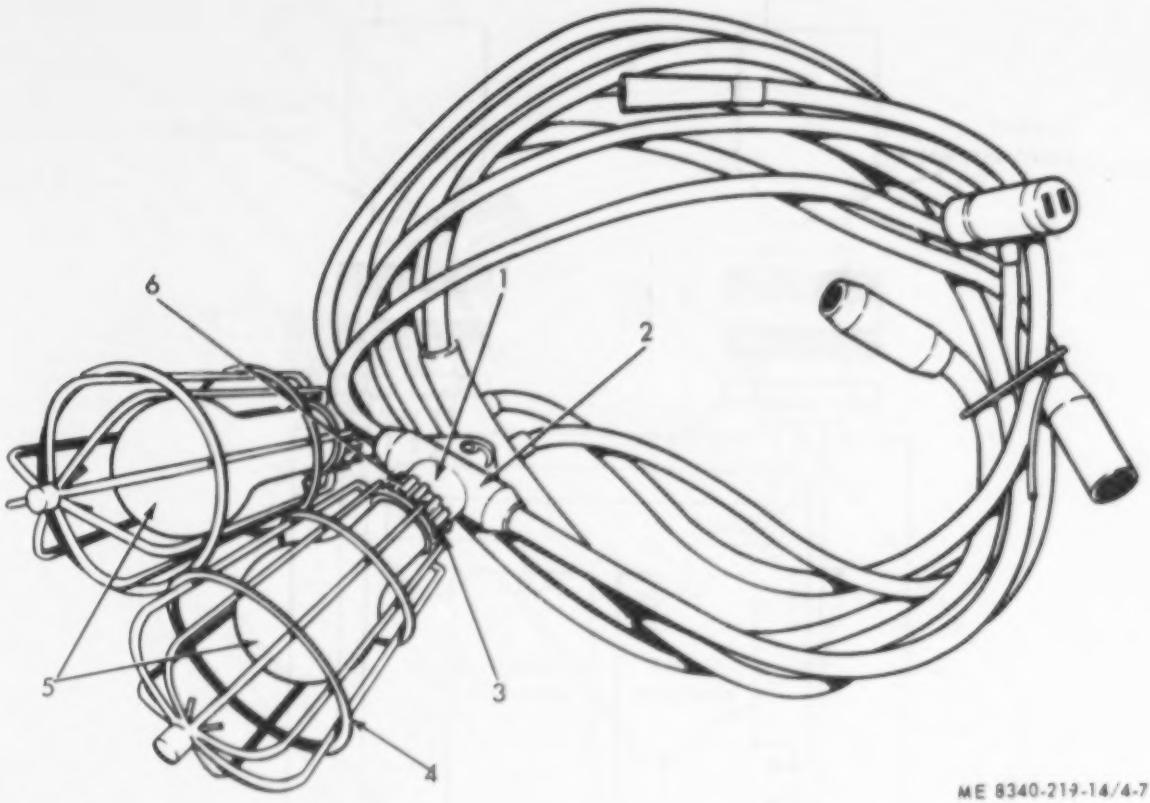
(1) *Removal.*

*(a)* Remove the setscrew (3, fig. 4-7) that secures the lamp guard collar (6) to the lamp socket tee (2).

*(b)* Remove the lamp guard from the lamp socket.

(2) *Replacement.* Replace an unserviceable lamp guard with a serviceable like item.

(3) *Installation.* Install the lamp guard in reverse order of removal.




ME 8340-219-14/4-7

1 Lamp socket
2 Lamp socket tee
3 Lamp guard setscrew
4 Lamp guard
5 Lamp
6 Lamp guard collar

*Figure 4-7. Lighting and outlet assembly.*

*b. Circuit Breaker.*

(1) *Removal.*

(*a*) Remove the circuit breaker (fig. 2-30) from its mounting bracket on the end arch assembly.

(*b*) Lift the switchbox cover and disconnect the cords from the terminals. Refer to the wiring diagram (fig. 4-8).

(*c*) Unscrew the watertight connectors (2, fig. 4-9) and remove the 16-foot cord (6) and 50-foot cord (1) from the switchbox (5).

(*d*) Loosen the 2-screw connector (3) and remove the 6-foot cord (4) from the switchbox.

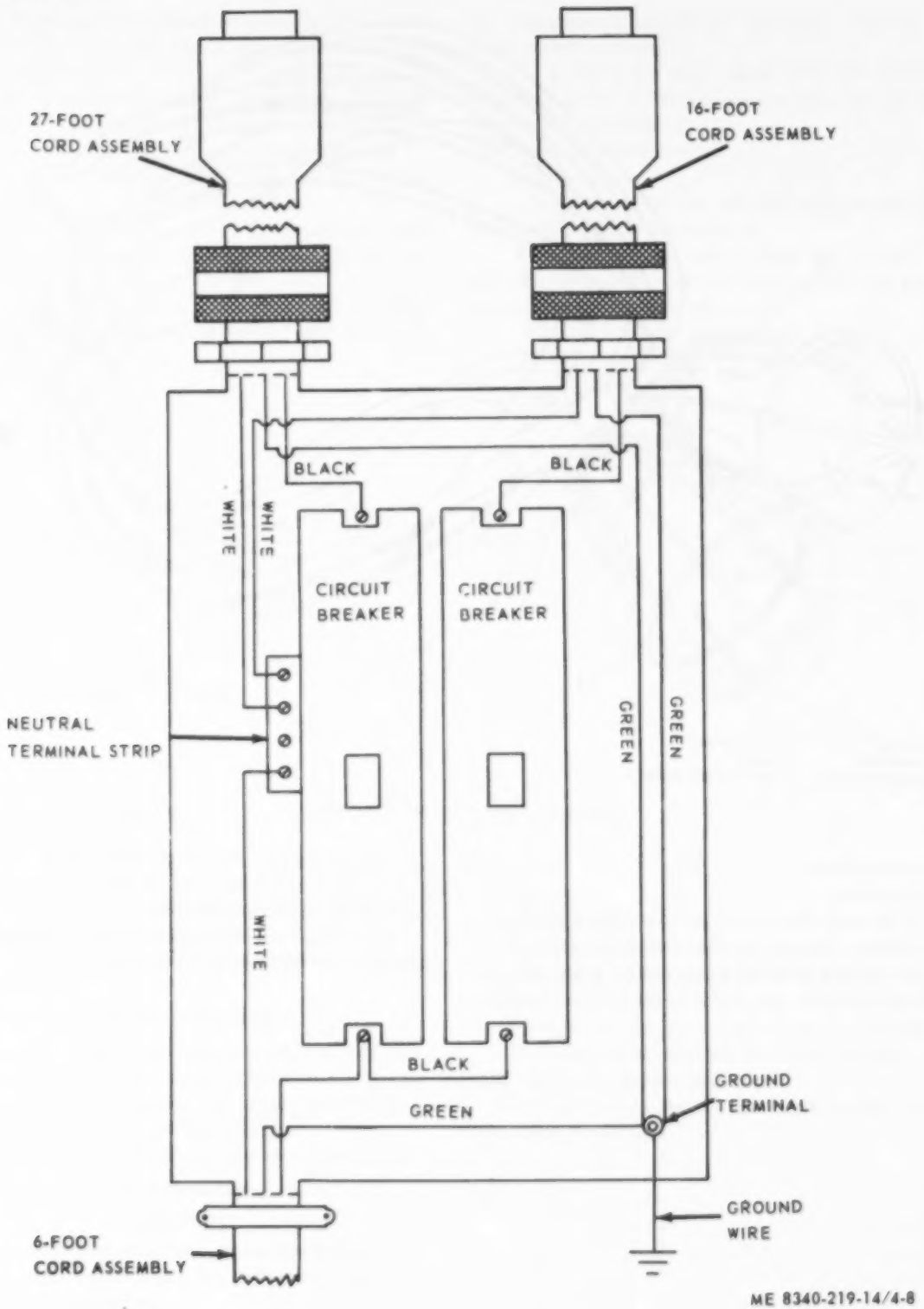
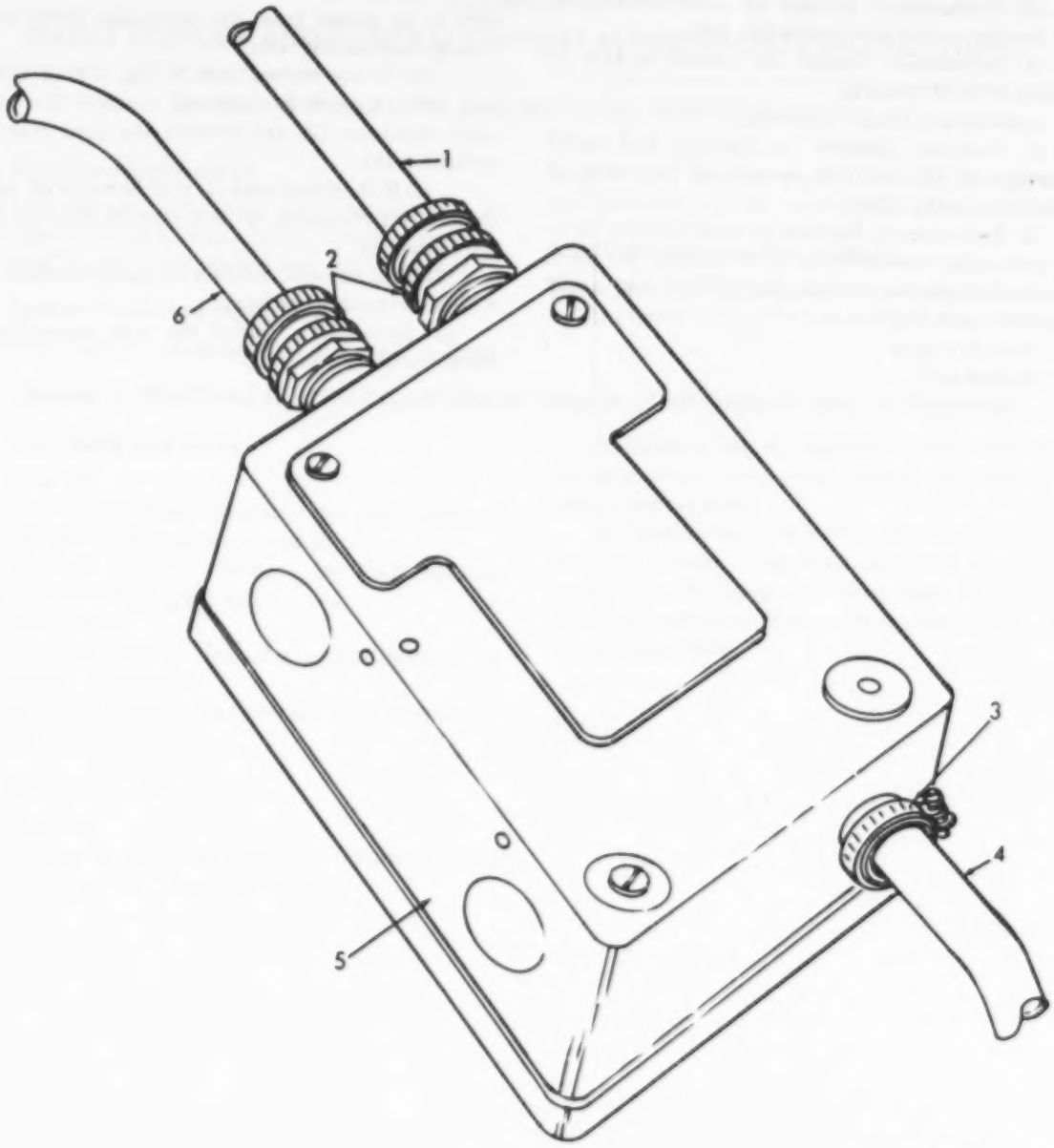



*Figure 4-8. Wiring diagram.*




ME 8340-219-14/4-9

1 50-foot cord assembly
2 Watertight connectors
3 2-screw connector
4 6-foot assembly
5 Switchbox
6 16-foot cord assembly

*Figure 4-9. Circuit breaker assembly.*

(2) *Replacement.* Replace an unserviceable circuit breaker with a serviceable like item.

(3) *Installation.* Install the circuit breaker in reverse order of removal.

*c. Lighting and Outlet Assembly.*

(1) *Removal.* Remove the lighting and outlet assembly (4, fig. 1-11) in reverse of the order of installation (para 2-2*p*).

(2) *Replacement.* Replace an unserviceable lighting and outlet assembly by a serviceable like item.

(3) *Installation.* Install the lighting and outlet assembly (para 2-2*p*).

*d. Cord Assembly.*

(1) *Removal.*

(*a*) Lift the switchbox cover and disconnect the cord to be placed from the terminals. Refer to the wiring diagram (fig. 4-8).

(*b*) If the 16-foot cord (6, fig. 4-9) or the 50-foot cord (1) is to be replaced, unscrew the watertight connector (2) and remove the cord from the switchbox (5).

(*c*) If the 6-foot cord (4) is to be replaced, loosen the 2-screw connector (3) and remove the cord from the switchbox.

(2) *Replacement.* Replace an unserviceable cord with a serviceable like item.

(3) *Installation.* Install the cord assemblies in reverse order of removal.

# CHAPTER 5
# DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

## Section I. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

### 5-1. Tools and Equipment

Tools, equipment, and repair parts issued with or authorized for the expandable, frame-type tent, are listed in the basic issue items list, appendix C.

### 5-2. Special Tools and Equipment

No special tools or equipment are required by direct support and general support personnel to perform maintenance on the expandable, frame-type tent.

### 5-3. Maintenance Repair Parts

Repair parts and equipment are listed and illustrated in TM 10-8340-219-24P (when published).

## Section II. REMOVAL AND INSTALLATION OF MAJOR COMPONENTS AND AUXILIARIES

### 5-4. Tent Body and Liner

*a. Removal.*

(1) *Tent sections.* Remove the tent sections from the tent frame (para 2-3*c* and *d*).

(2) *Liner sections.* Remove the liner sections from the tent frame (para 2-3*c*).

*b. Installation.*

(1) *Tent sections.* Install the tent sections on the tent body (para 2-2).

(2) *Liner sections.* Install the liner sections on the liner (para 2-2).

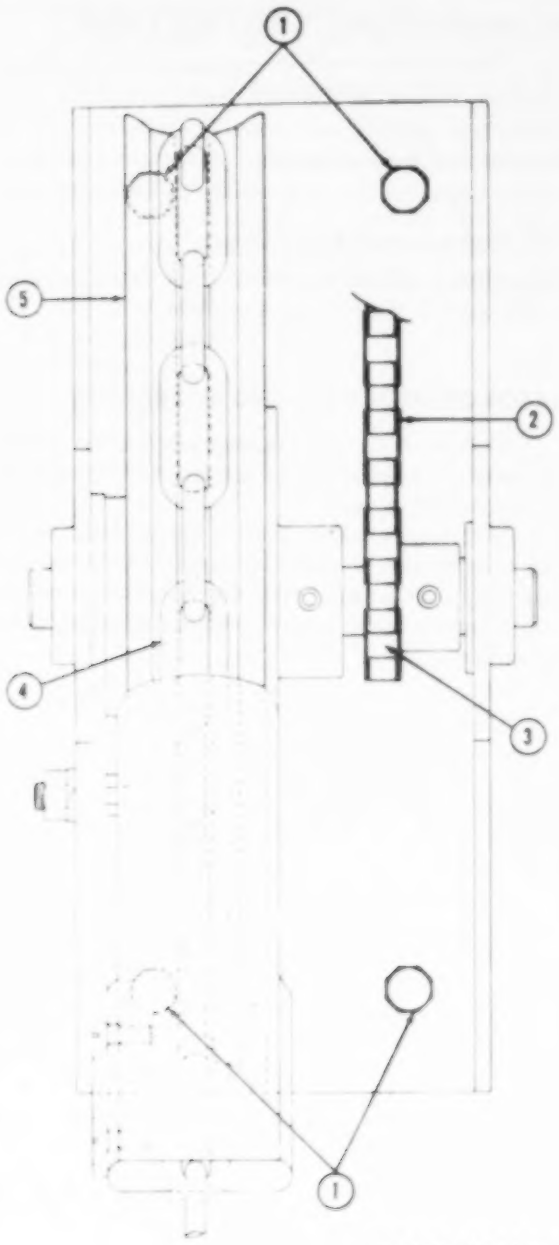
### 5-5. Hoist Assembly

*a. Removal.*

(1) Remove the door winch and transom chord assembly from the frame (para 2-3*d*).

(2) Remove the six machine screws that secure the hoist cover to the hoist support and remove the hoist assembly cover.

(3) Remove the four bolts (1, fig. 5-1) that secure the hoist bracket to the hoist support. Lift the hoist assembly to disengage the roller chain (2) from the winch sprocket, and remove the hoist assembly from the transom chord.




ME 8340-219-14/5-1

1 Bolts (3/8 inch)
2 Roller chain
3 Drive sprocket
4 Hoist chain
5 Hoist chain sprocket

*Figure 5-1. Hoist assembly, removal and installation.*

*b. Installation.*

(1) Install the hoist assembly on the transom chord in the reverse order of removal.

(2) Install the door winch and transom chord assembly on the frame (para 2-2*c*).

## 5-6. Door Spar Assembly

*a. Removal.* Remove the door spar assembly from the frame (para 2-3*d*).

*b. Installation.* Install the door spar assembly on the frame (para 2-2*e*).

# CHAPTER 6
# REPAIR OF TENT FABRIC

## Section I. TENT BODY AND LINER

### 6-1. General

The tent body (outer fabric) consists of the roof end, roof intermediate, and end wall sections. For a description of these items, refer to paragraph 1-5*b*. The tent liner provides protection from the sun's heat. The liner is described in paragraph 1-5*c*.

### 6-2. Removal

Remove the tent section or liner section (para 5-4).

### 6-3. Inspection and Repair

Refer to TM 10-269 for inspection and repair instructions on the tent body or liner.

### 6-4. Installation

Install the tent section or liner section (para 5-4).

## Section II. COVERS

### 6-5. General

The covers protect the tent sections and liner sections during transportation and storage. Refer to paragraph 1-5*f* for a description of the covers.

### 6-6. Inspection and Repair

Refer to TM 10-269 for inspection and repair instructions on the covers.

# CHAPTER 7
# REPAIR OF TENT SUPPORT COMPONENTS

## Section I. PARTS SECURED WITH SPRING PINS AND DRIVE SCREWS

### 7-1. Parts Secured With Spring Pins

*a.* Use an appropriate pin drive punch and hammer and remove the spring pin and unserviceable part from the assembly.

*b.* Insert a new part in the proper position and drill each hole, using the appropriate sized drill. Take special care to position and drill holes in the new part with such precision as to insure proper fit.

*c.* Replace the spring pins.

### 7-2. Parts Secured With Drive Screws

*a.* Using a chisel, vise grip plier, claw hammer, or crowbar, pull the drive screws from the assembly and remove the unserviceable part.

*b.* Place the new part in the proper position. Drill a new hole within 1/4 inch of the old hole and secure with new drive screws.

## Section II. DOOR WINCH AND TRANSOM CHORD ASSEMBLY

NOTE

All welding or repair of broken welds will be accomplished with an inert gas shielded arc welder, as described in TM 9-237.

### 7-3. General

The door winch and transom chord assembly, located over each end arch, provides the means for opening or closing the vehicle doors. This assembly is described in paragraph 1-5*a*.

### 7-4. Disassembly

*a. Hoist Assembly.*

(1) Remove the door winch and transom chord assembly from the frame (para 2-3*d*).

(2) Remove the hoist assembly from the transom chord (para 5-5).

(3) Remove the hoist chain (4, fig. 5-1).

(4) Remove the roller chain (2).

*b. Transom Chord Assembly.*

(1) Remove the door winch and transom chord assembly from the frame (para 2-3*d*).

(2) Remove the machine screws (1, fig. 4-6) that attach the gusset plates (2) to the transom chord (3) and remove the gusset plates and gusset plate shim from the transom chord.

(3) Remove the nuts (11, fig. 4-5) and lockwashers (10) from the capscrews (9) that attach the nylon bearing brackets (7) to the transom chord.

(4) Disengage the roller chain from the winch sprocket (2) and remove the door winch shaft assembly from the transom chord.

(5) Remove the spring pins to disassemble the winch shaft stub (13), left and right winch shafts (16 and 21), shaft sleeves (15, 17, and 20), and winch sprocket.

*c. Cable and Toggle Pin Assembly.* Refer to paragraph 4-20*b* and remove the cable and toggle pin assembly.

### 7-5. Cleaning, Inspection, and Repair

*a. Cleaning.* Clean all parts with a cleaning solvent and dry thoroughly.

*b. Inspection.*

(1) Inspect the hoist assembly (fig. 5-1) for a bent or broken sprocket, a broken chain, and missing or unserviceable bolts.

(2) Inspect the door winch (fig. 4-5) and transom chord (fig. 4-6) for bends, breaks, and missing or unserviceable parts.

(3) Inspect the cable (22, fig. 4-5) and toggle pin assembly (24) for cuts and bends or breaks.

*c. Repair.*

(1) Replace all unserviceable parts with serviceable like items.

(2) Fabricate a cable and toggle pin assembly from the toggle pins supplied and 1/8 inch diameter wire rope cut into 21-foot lengths.

### 7-6. Assembly

*a. Hoist Assembly.*

(1) Assemble the hoist assembly in reverse order of disassembly (para 7-4*a*).

(2) Install the door winch and transom chord assembly on the frame (para 2-2*c*).

*b. Transom Chord Assembly.*

(1) Assemble the transom chord assembly in reverse order of disassembly (para 7-4*b*).

(2) Install the door winch and transom chord assembly on the frame (para 2-2*c*).

*c. Cable and Toggle Pin Assembly.* Refer to paragraph 4-20*b* and install the cable and toggle pin assembly.

## Section III. DOOR SPAR ASSEMBLY

### 7-7. General

The seven door spar assemblies, located on each tent and section, are a part of the vehicle door. The door spar assembly is described in paragraph 1-5*b*.

### 7-8. Disassembly

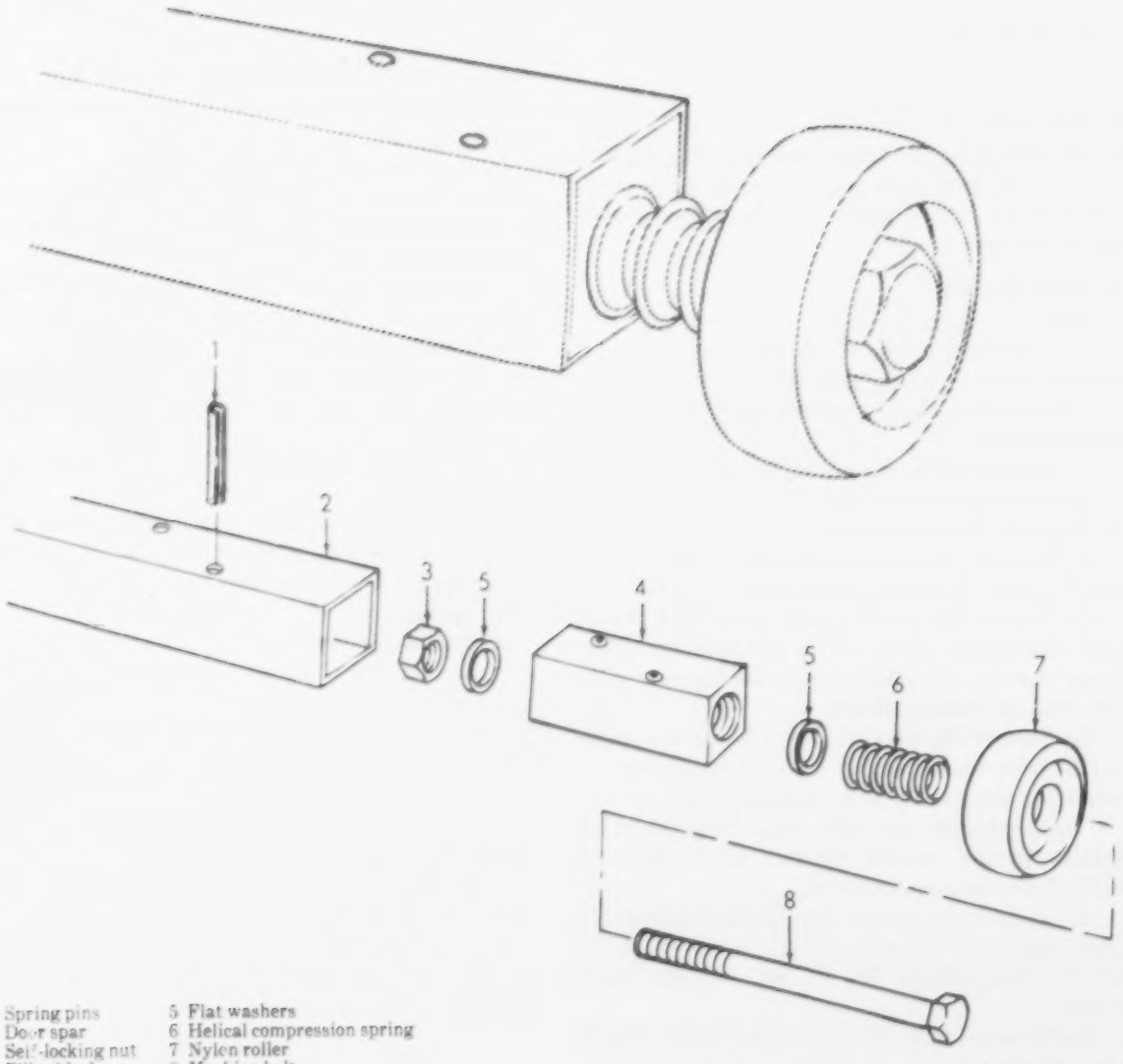
*a.* Lower the applicable end arch (para 2-3*d*).

*b.* Remove the door spar assembly by reversing the installation procedures described in paragraph 2-2*e*.

*c.* Remove the filler block (4, fig. 7-1) from the spar (2).

*d.* Mark the position of, and remove the nut (3) from the bolt (8), and remove the nut and flatwasher (5).

*e.* Remove the bolt, nylon roller (7), helical compression spring (6) and flat washer.




1 Spring pins
2 Door spar
3 Self-locking nut
4 Filler block
5 Flat washers
6 Helical compression spring
7 Nylon roller
8 Machine bolt

ME 8340-219-14/7-1

*Figure 7-1. Door spar assembly, disassembly and assembly.*

## 7-9. Cleaning, Inspection, and Repair

*a. Cleaning.* Clean all parts with a cleaning solution and dry thoroughly.

*b. Inspection.* Inspect the door spar assembly for bends, dents, and unserviceable parts.

*c. Repair.* Replace all unserviceable parts with serviceable like items.

NOTE

If the 5/8- by 5-inch long machine bolt (8, fig. 7-1) requires replacement, grind about 1/8 inch off the head of the replacement bolt before installing.

## 7-10. Assembly

*a.* Assemble the door spar assembly in reverse order of disassembly (para 7-8).

*b.* Install the door spar assembly (para 2-2*e*).

*c.* Raise the applicable end arch (para 2-2*e*).

# CHAPTER 8
# ADMINISTRATIVE STORAGE AND DEMOLITION TO PREVENT ENEMY USE

## Section I. ADMINISTRATIVE STORAGE

### 8-1. General

The tent will be inspected for damage, corrosion, cleanliness, and wet fabric. Perform the preventive maintenance checks and services (para 4-9).

### 8-2. Storage

*a.* Pack all tent components in the original containers, as outlined in paragraph 1-6*b*.

*b.* The tent should be stored in a warehouse or shed. If it is necessary to store in the open, the tent will be stored on dunnage about six inches from the ground in a well drained area protected from prevailing winds. In open storage, the tent will be covered with tarpaulins, or other suitable waterproof covers, in a manner to provide maximum protection from the elements and prevent pooling of water.

## Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

### 8-3. General

When capture or abandonment of the frame-type, expandable tent is imminent, the responsible unit commander must make the decision either to destroy the equipment or to render it inoperative. Based on the decision, orders are issued which cover the desired extent of demolition. Whatever method of demolition is employed, it is essential to destroy the same vital parts of the tent and all corresponding repair parts. When the lack of time or personnel prevents a complete destruction of the equipment, the following priorities will be used in the demolition of essential parts:

| Priorities | Parts |
|---|---|
| 1 | Fabric |
| 2 | Frame |

### 8-4. Demolition to Render the Equipment Inoperative

Use sledge hammers, crowbars, picks, axes, or any other heavy tools which may be available.

### 8-5. Other Demolition Methods

*a. Scattering and Concealment.* Remove all easily accessible parts and wiring, and scatter them through dense foliage, bury them, or throw them in a body of water.

*b. Burning.* Pack rags, clothing, or paper under and around the tent. Saturate the packing with gasoline, oil, or diesel fuel, and ignite.

*c. Submersion.* Completely submerge the tent in a body of water to provide water damage and concealment. Salt water does greater damage to metal parts than fresh water.

# APPENDIX A
# REFERENCES

## A-1. Fire Protection

| | |
|---|---|
| TB 5-4200-200-10 | Hand Portable Fire Extinguisher for Army Users |

## A-2. Painting

| | |
|---|---|
| TM 9-213 | Painting Instructions for Field Use |

## A-3. Maintenance

| | |
|---|---|
| TM 9-237 | Welding: Theory and Application |
| TM 10-269 | General Repair for Canvas and Webbing |
| TM 38-750 | Army Equipment Record Procedures |

## A-4. Shipment and Storage

| | |
|---|---|
| TB 740-93-2 | Preservation of USAMEC Mechanical Equipment for Shipment and Storage |
| TM 740-90-1 | Administrative Storage of Equipment |

# APPENDIX B
# MAINTENANCE ALLOCATION CHART

## Section I. INTRODUCTION

### B-1. General

*a.* This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

*b.* Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

*c.* Section III lists the special tools and test equipment required for each maintenance function as referenced from section II.

*d.* Section IV Contains supplemental instructions, explanatory notes and/or illustrations required for a particular maintenance function.

### B-2. Explanation of Columns in Section II

*a. Group Number, Column (1).* The assembly group is a numerical group assigned to each assembly in a top-down breakdown sequence. The applicable assembly groups are listed on the MAC (Maintenance Allocation Chart) in disassembly sequence beginning with the first assembly removed in a top-down disassembly sequence.

*b. Assembly Group, Column (2).* This column contains a brief description of the components of each assembly group.

*c. Maintenance Functions, Column (3).* This column lists the various maintenance functions (A through K) and indicates the lowest maintenance category authorized to perform these functions. The symbol designations for the various maintenance categories are as follows:

C — Operator or crew
O — Organizational maintenance
F — Direct support maintenance
H — General support maintenance

The maintenance functions are defined as follows:

A - Inspect. To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards.

B - Test. To verify serviceability and to detect electrical or mechanical failure by use of test equipment.

C - Service. To clean, to preserve, to charge, to paint, and to add fuel, lubricants, cooling agents, and air.

D - Adjust. To rectify to the extent necessary to bring into proper operating range.

E - Aline. To adjust specified variable elements of an item to bring to optimum performance.

F - Calibrate. To determine the corrections to be made in the readings of instructions or test equipment used in precise measurement. Consists of the comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared with the certified standard.

G - Install. To set up for use in an operational environment such as an emplacement, site, or vehicle.

H - Replace. To replace unserviceable items with serviceable assemblies, subassemblies, or parts.

I - Repair. To restore an item to serviceable condition. This includes, but is not limited to, inspection, cleaning, preserving, adjusting, replacing, welding, riveting, and strengthening.

J - Overhaul. To restore an item to a completely serviceable condition as prescribed by maintenance serviceability standards using the Inspect and Repair Only as Necessary (IROAN) technique.

K - Rebuild. To restore an item to a standard as nearly as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements (items) using original manufacturing tolerances and specifications, and subsequent reassembly of the item.

*d. Tools and Equipment, Column (4).* This column is provided for referencing by code the special tools and test equipment (sec. III) required to perform the maintenance functions (Sec. II).

*e. Remarks, Column (5).* This column is provided for referencing by code the remarks (Sec. IV) pertinent to the maintenance functions.

### B-3. Explanation of Columns in Section III

*a. Reference Code.* This column consists of a number and a letter separated by a dash. The number refer-

ences the T&TE requirements column on the MAC. The letter represents the specific maintenance function the item is to be used with. The letter is representative of columns A through K on the MAC.

*b. Maintenance Level.* This column shows the lowest level of maintenance authorized to use the special tool or test equipment.

*c. Nomenclature.* This column lists the name or identification of the tool or test equipment.

*d. Tool Number.* This column lists the manufacturer's code and part number, or Federal stock number of tools and test equipment.

## B-4. Explanation of Columns in Section IV

*a. Reference Code.* This column consists of two letters separated by a dash, both of which are references to section II. The first letter references column (5) and the second letter references a maintenance function, column (3), A through K.

*b. Remarks.* This column lists information pertinent to the maintenance function being performed, as indicated on the MAC, section II.

## Section II. MAINTENANCE ALLOCATION CHART

| (1) Group Number | (2) Assembly Group | (3) Maintenance Functions A Inspect | B Test | C Service | D Adjust | E Align | F Calibrate | G Install | H Replace | I Repair | J Overhaul | K Rebuild | (4) Tools and Equipment | (5) Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | Tent Body | C | | C | | | | | O | O | F | | | A-I, A-J |
| 02 | Tent Liner | C | | C | | | | | O | O | F | | | B-I, B-J |
| 03 | Tent Support Components | C | | C | | | | | O | O | H | | 1-H, 2-H | |
| 04 | Tent Anchoring Components | C | | C | | | | | O | | | | | |
| 05 | Electrical Equipment | C | | C | | | | | O | O | F | | | |
| 06 | Tent Accessories | C | O | C | | | | | O | O | F | | | |

## Section III. SPECIAL TOOL AND SPECIAL TEST EQUIPMENT REQUIREMENTS

| Reference code | Maintenance level | Nomenclature | Tool number |
|---|---|---|---|
| 1-H | O | Arch spacer assembly | 8340-951-0995 |
| 2-H | O | Wrench | 5120-970-1222 |

## Section IV. REMARKS

| Reference code | Remarks |
|---|---|
| A-I | Repair by hand sewing and cement patching at Organizational level. |
| A-J | Machine sewing at (F) Direct Support level. |
| B-I | Repair by hand sewing at Organizational level. |
| B-J | Machine sewing at (F) Direct Support level. |

# APPENDIX C

# BASIC ISSUE ITEM LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED

## Section I. INTRODUCTION

### C-1. Scope

This appendix lists basic issue items, items troop installed or authorized which accompany the expandable, frame-type tent, and are required by the crew/operator for operation, installation, or operator's maintenance.

### C-2. General

This basic issue items, items troop installed or authorized list is divided into the following sections:

*a. Basic Issue Items List—Section II.* Not applicable.

*b. Items Troop Installed or Authorized List—Section III.* A list in alphabetical sequence of items which at the discretion of the unit commander may accompany the end item, but are NOT subject to be turned in with the end item.

### C-3. Explanation of Columns

The following provides an explanation of columns in the tabular list of Basic Issue Items List, Section II, and Items Troop Installed or Authorized, Section III.

*a. Source, Maintenance, and Recoverability Code(s) (SMR):* Not applicable.

*b. Federal Stock Number.* This column indicates the federal stock number assigned to the item and will be used for requisitioning purposes.

*c. Description.* This column indicates the Federal item name and any additional description of the item required.

*d. Unit of Measure (U/M).* A 2 character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ft, ea, pr, etc.

*e. Quantity Authorized (Items Troop Installed or Authorized Only).* This column indicates the quantity of the item authorized to be used with the equipment.

## Section III. ITEMS TROOP INSTALLED OR AUTHORIZED LIST

| (1) SMR Code | (2) Federal Stock Number | (3) Description<br>Ref No. & Mfr Code<br>Usable on Code | (4) Unit of Meas | (5) Qty Auth |
|---|---|---|---|---|
| PC | 7520-559-9618 | CASE: Maintenance and operational manuals | EA | 1 |

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By Order of the Secretary of the Army:

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